Harnessing Emotions:

The Impact of Developing Ability Emotional Intelligence Skills on Perceptions of Collaborative Teamwork in a Project-Based Learning Class

by

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ABSTRACT

The purpose of this action research study was to implement and analyze an intervention designed to improve perceptions of working with others as well as practice and improve emotional tools related to such interactions through the systematic development of ability emotional intelligence (EI) related skills. The present study sought to: (1) explore high school students' perceptions of their role as part of a team during teamwork; (1a) investigate how perceptions differed by EI level; (2) examine how students' perceptions of their role in teamwork were influenced by being paired with more advanced (ability EI) peers or less advanced peers, based on ability emotional intelligence test scores; (3) determine if ability emotional intelligence related skills could be developed over the course of a 7-week intervention.

The intervention took place in a 12th grade US Government & Economics classroom with 34 participants for examination of general trends, and 11 focal participants for focused and in-depth analysis. Students were taught about emotion theory and engaged in two weeks of ability emotional intelligence skills training, followed by a five-week project cycle in which students were required to work together to achieve a common goal. The research design was mixed methods convergent parallel. Quantitative data were collected from post- and retrospective pre-intervention surveys regarding student perceptions about working with others and their ability EI related skills. Qualitative data were collected through on-going student reflective journal entries, observational field notes, and interviews with the focal group of participants.

Results suggested the intervention had a significant effect on students' perceptions of working with others and perceived ability emotional intelligence related

skills. Significant positive change was found through quantitative data analysis, revealing students' perceptions about working with others in teams had improved as a result of the intervention as had their perceptions about their ability EI related skills. Qualitative analysis revealed rich, thick descriptions exploring this shift in perception among the 11 focal students, providing the evidence necessary to support the effectiveness of the intervention. Results suggested the possibilities for improved teamwork in the classroom.

DEDICATION

This work is dedicated to my husband, Alex. Alex has always been my greatest supporter and my biggest inspiration, and he was my rock throughout this process. He has always recognized my potential and pushed me to set and reach goals beyond my wildest dreams. Alex inspires me on a daily basis with his passion for life and business, and his vision to always grow and become better than the day before. Without the support and love from my husband, this would not have been possible. I also dedicate this work to our daughter, Isabella Camille. She has taught me strength and perseverance I did not know I had, and I want nothing more than to be the best possible example for her. I love you both more than words can describe.

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CHAPTER 1

LEADERSHIP CONTEXT AND PURPOSE OF THE STUDY

The thought of groupwork makes my skin crawl. The very term conjures up memories of being assigned to work with peers who, for one reason or another, were unproductive and disengaged in the task at hand. As a student who cared about my grades I would take the initiative, organize the group and delegate the tasks each member should complete. Yet, it seemed that despite my best efforts to get our group mobilized and working toward our goal, the lion's share of work fell on my shoulders. Following submission of the group project each member of my team received high marks as a result of my, usually, single-handed dedication to see the project through to completion.

I completed numerous "group projects" on my own from middle school through college, leaving me with an aversion to working in groups, or rather, collections of students working in isolation to (hopefully) finish an assigned project. I suspect I am not alone in this experience as my teacher colleagues have confided in me over the years about their distaste for groupwork, as it is a pattern that still exists among the current generation of students. In my previous research I investigated the attitudes of secondary teachers toward the use of groupwork during projects. Of the six educators who participated in individual, semi-structured interviews, the common theme that emerged was this: while classic groupwork issues always seem to surface (social loafers, in-group conflict, disengagement), the potential for peer-to-peer discussion of concepts in 'teenage' vernacular is worth the risk. For the purposes of this study, the term groupwork has been defined as individual students grouped loosely together with little cohesion and

infrequent social interaction; the term teamwork has been defined as individual students working in unison through constant and continuous communication and participation to achieve a common goal.

One aspect of working with others that could contribute to the dislike of groupwork is the requirement of working with a diverse group of others, a common situation in the modern classroom. Peers working in a group may soon recognize the differences among them: strengths and limitations of their own, as well as those of others. Accompanying these realizations can be emotional reactions. Whether or not students outwardly demonstrate their emotions based on display rules—expectations of how and when to show emotion and in what context—emotion remains present. Social Emotional Learning (SEL) is one learning strategy that developed from the need to improve the social interactions among students when working together, aimed at enhancing students' ability to apply what they know, as well as their attitudes and skills, to "understand and manage emotions…establish and maintain positive relationships, and make responsible decisions" (Weissberg & Cascarino, 2013, p. 10).

The focus of SEL is clear: to improve the emotional abilities of students to prepare them for success in social interactions and foster self-motivation. Further, it appears all students might benefit from an additional focus on emotional development. The federal government took notice of this with the Institute of Education Sciences funding a researcher-practitioner partnership between the SEL organization and a Nevada state school district to add SEL instruction to at-risk student education programs. Additionally, the US Department of Education (2013) recently awarded additional points

to applications that made SEL a cornerstone of a district's improvement efforts. Yet, is implementation of the SEL the best way to achieve these emotionally-oriented goals, or can this be accomplished through a more systematic method integrated into academic courses?

To consider this question more fully there is a need for greater understanding of the rooted concept of ability emotional intelligence (EI). According to ability EI theorists Mayer, Salovey, & Caruso (2008), emotional intelligence is the "ability to engage in sophisticated information processing about one's own and others' emotions and the ability to use this information as a guide to thinking and behavior" (p. 503). Mayer, et al (2008) highlight a number of studies that consistently conclude individuals with high EI are perceived by others as "more pleasant to be around, more empathic, and more socially adroit than those with low EI" (p. 525). Moreover, the authors also find those with high EI scores demonstrate better relationships in business as well as educational settings (2008). While academic literature around the concept of ability EI has not demonstrated evidence that the intelligence itself can be increased, there is a possibility that skills related to ability EI can be developed over time and alleviate individual limitations in corresponding EI areas. Thus, there appears to be potential to develop ability EI-related skills of students so that they may graduate from high school with a series of emotionally-related skills that can aid in attaining success, health, productivity and happiness.

To help shed light on the potential of fostering collaborative learning and collaboration skills in students, I proposed to study how the development of ability EI-

related skills could impact students' perceptions of their experiences in teamwork, and to what extent ability EI related skills could be developed in a 7-week intervention. The purpose of Chapter One is to provide the reader with the context leading up to the current study while also introducing the problem of practice, purpose statement, and the research questions that guided the study.

National Context

The question which remains at the forefront for secondary educators is, what do we want our students to know and be able to do when they graduate from high school? The answer to this question varies based on who is responding. As a secondary teacher situated in a position where I must teach to the expected US Government curriculum to ensure my students are prepared for civic participation in our society, I am also a witness to the rapidly evolving civilization in which we live. While the prescribed knowledge does not change much from year to year, the demands of the professional world are increasingly shaped by technology and the rapid pace of change in American, and international, life. I am preparing students with basic concepts of government functions and purposes; but am I doing everything possible to ensure these students will be ready to successfully participate as well-rounded citizens in the US?

Although there is an emphasis on content knowledge that is expected to be known when students graduate, there is also the expectation that students should leave high school with a set of skills that could be transferable to multiple industries and institutions of higher learning. Yet, as Zmuda, et al. (2015) put it, "there is a disconnect between the traditional school model and the challenges and opportunities of today's

world" (p. 6). With the demand of teaching the expected material comes the compartmentalizing of information that results in breadth of learning over depth of learning. Students become passive learners as teachers set the pace, driven by an antiquated mindset of "sage on the stage" even though in the 21st century, due in large part to technological advances such as the Internet, knowledge is no longer scarce (Zmuda, et al., 2015). Rather than comply with the current traditional structure of education, it has been argued we must enable students to learn passionately through problem-solving with a focus on topics of interest, which can be achieved in part via collaboration in teams of peers. As Zmuda, et al. (2015) argue, "Today's industrial-age, assembly-line educational model based on fixed time, place, curriculum, and pace is insufficient in today's society and knowledge-based economy" (p. 8) and should be replaced with a student-driven model where students can engage in deeper learning while working with peers through collaboration. The benefits of a student-driven, collaborative learning model are not fleeting; students will develop the skills in conjunction with learning content material, skills that can be carried on into the previously noted knowledge-based economy.

According to the National Research Council (2012), schools must ensure all students are content-capable, culturally literate, and lifelong learners. They are also to be competent in intra- and inter-personal abilities so they are prepared for the workforce and life. Many Americans support this additional requirement for graduating from high school, as a 2013 PDK/Gallup Poll of the Public's Attitudes Toward the Public Schools finds. This poll shows "most Americans agree that public schools should teach students a

full range of social, emotional, and cognitive competencies" including among them "communication skills (94%) and how to collaborate on projects (84%)" (Weissberg & Cascarino, 2013, p. 11). The ability of students to work effectively with others is near the top of the wish list for the American public and professional industry. According to Gibert, Tozer, & Westoby (2017), there has been a recent call for "explicit training in 'soft skills' for university graduates to prepare them for careers both in academia and outside" (p. 81). Among the soft skills are conflict resolution, cultural diversity and awareness, strategic thinking, and emotional intelligence (2017).

Global industries recognize the need to recruit and hire employees who are socially literate and who can work in, and contribute to, teams. The authors of a Forbes magazine article *Top Employers Say Millennials Need These 4 Skills in 2017* (2017) note the top skills today's employers look for in prospective employees include: attention and agility, characteristics related intrinsically to an individual's ability to manage their emotions, and humility (www.forbes.com). Among the top skills employers have sought from workers in 2017 were teamwork and communication, which consistently tops the list (www.topresume.com).

Local Context and Problem of Practice

The call for increased, enhanced collaboration and teamwork is not only ongoing at the national level, but also at the local level. School districts are recognizing the need for so-called 21st century skills, in part because they are embedded within the current push for the Common Core State Standards (CCSS). The school district in which I teach,

Rancho School District (RSD)[1] in San Jose, CA, maintains a lofty vision statement which capitalizes on the aforementioned idea of globalization and the call for increased collaboration among students. The vision statement reads, "All…District students are inspired and prepared to succeed in a global society" (www.sjusd.org/opportunity21). RSD goes a step further to outline some of the skills that students will need to succeed in the 21st century and have aptly named them the "5 Cs": (a) critical thinking and problem solving; (b) creative thinking skills; (c) communication skills; (d) collaboration skills; (e) global citizenship. The goal behind identifying these "Cs" is to prepare students for their years beyond their time in RSD classrooms, and each of these skills is rooted in social interaction. Methods for developing these skills have been adopted by the district and my school site specifically with an emphasis on Project-Based Learning (PBL) to serve as the vehicle that will deliver students to the acquisition of these soft skills. According to the Buck Institute for Education, PBL helps students "develop deep content knowledge as well as critical thinking, creativity, and communication skills in the context of doing an authentic, meaningful project" (www.bie.org/about). As such, PBL as a teaching pedagogy has the potential to bridge the gap between traditional teaching methods and 21st century demands through the fostering of the skills required by industry and institutions of higher education.

The school site at which I teach and in which the present study took place is Allen Lindberg High School (ALHS)[2], one of twelve high schools in RSD and home to over 2,000 students. The culture of ALHS is centered around its former identity as a magnet

[1] A pseudonym for the school district has been used for confidentiality
[2] A pseudonym for the school site has been used for confidentiality

school for Visual and Performing Arts, which allows ALHS to attract students from all around the district. The demographics suggest it is a relatively diverse high school, with 72% Hispanic, 15% Caucasian, 4% African American, 4% Asian, and 5% of students identifying as Other. Of the students, 54% are from low-income families which means these families are eligible for state-sponsored free and reduced lunch programs, and 14% are English Language Learners. In an effort to prepare RSD schools for the reforms associated with Common Core Curriculum, a grant was offered to schools that develop a strategic plan to enhance student learning. According to the San Jose Mercury News, the grant allows "the schools to redesign their instruction and bring transformational change to student learning" (www.mercurynews.com/2013). Three schools were awarded $100,000 to implement their strategic plan, and my school, ALHS, is one of the grant recipients.

The strategic plan adopted by ALHS is to implement Project-Based Learning (PBL) to better prepare our students to the district's vision statement, leaving them inspired and prepared to succeed in their lives beyond high school and equipped to work with individuals from a diversity of backgrounds. The structure of PBL includes key knowledge in the content area while simultaneously developing critical 21st century skills, including: collaboration, critical thinking/problem solving, and self-management (www.bie.org/about). I was one of the initial teachers who was trained over two consecutive years by the Buck Institute of Education's (BIE) PBL branch. As an educator drawn to the concept of experiential learning, I have been practicing a 'version' of PBL in my classroom for years before the grant money was offered. Yet in those first few

years, I was not aware of nor exposed to any formal structures built around the concept until the redesign efforts commenced. I also had struggled with achieving productive collaboration and ensuring that all students working in a group were learning. I was hopeful that PBL practices would alleviate some of the distress that comes with group work, and it was soon into implementing PBL that I began to personally differentiate groupwork from teamwork.

After eight years of teaching grades 9 and 12, I continue to practice PBL in my classroom as an Advanced Placement (AP) US Government and Politics as well as regular US Government and Economics teacher. During the 2015-2016 school year our school was selected to work with the George Lucas Education Foundation (GLEF), which develops PBL curriculum for AP classes including AP Government and AP Environmental Science. Historically, PBL has not been considered for use in an AP environment because AP classes are traditionally filled with lecture notes followed by frequent examinations. Thus, projects seem like a foreign pedagogy to traditional AP teachers. However, the curriculum developed by the GLEF is engaging, experiential and overall it is successful with my students. Yet despite the powerful effects of PBL in AP classes, the issues of achieving a state of "teamwork" compared to groupwork remains a common frustration I experience, and is experienced by teachers who are teaching PBL, regardless of how well-structured the curriculum and the projects are.

One of the central tenets of PBL is collaboration with peers usually around solving a societal problem or creating a project to demonstrate knowledge (www.bie.org/about/what_pbl). The ability to work with others from diverse backgrounds

is a common requirement for careers in the modern professional world, and the current trends in classroom instruction reflect the importance of collaboration as seen in the increase of its use. However, successful collaboration is elusive. From my time working with teachers on the ALHS campus, I have observed that the largest struggles teachers and students have are twofold: (a) managing conflict within groups as students executed collaborative projects with their peers, and (b) ensuring that all team members are empowered and excited about the project in such a way that they are willing to participate in the collaborative process.

As a teacher leading PBL instruction in my classroom I experience the same undesirable side effects with group work that occurred when I was in school. As revealed through interviews in my previous research around group work in the classroom, exploring students' perceptions of group work, a handful of conclusions can be drawn. First, it appears as if students are conditioned to the expectations of group work rather than teamwork: students self-segregate into groups, divide up the work, and communicate as little as possible while they each complete a section of the project. Secondly, within groups, regardless of how much structure was provided about who did what, there are some students who do not contribute to the team, and others who take over and control the entire project, and students anticipate this occurring because of their previous experiences in group work. After three previous cycles of my research involving teacher and student interviews, surveys, and journaling, these issues consistently appear to be manifestations of symptoms of underlying causes, including low self-efficacy in teams, intimidation and hesitation to confront uncomfortable issues, and feeling insecure in

communication. Therefore, my problem of practice is framed by the students' inability to confront conflict or regulate their emotions during teamwork, and the revelation that emotional issues are one of the foundational obstacles to collaboration in teamwork versus loosely working together in a group.

Despite the effort put into developing specific roles, creating group contracts, and even letting students hold one another accountable through firing abilities (students who were fired completed the projects individually), group work tendencies tend to outweigh the potential for productive teamwork. I have spent a great deal of time working with groups to ensure some semblance of balance to avoid dysfunctional groups, which I can recall from my past experience as a student. For a variety of reasons, group work as we know it is difficult for students. Students in my class appear to not know how to manage or regulate their groups when working in those groups. Students are not used to the concept of teamwork, which requires sharing of information and constant and consistent communication. Taken together, it is clear students must be prepared to work effectively in teams at the high school level so that they can transfer these skills to working in teams in the workplace setting and beyond.

Definition of Terms

Collaboration

Collaboration via teamwork is a method that I continue to attempt to foster in my classroom and working with others is often associated with the term collaboration. One aspect of socially-skilled preparation is an emphasis on working with others, therefore it is necessary to provide a definition of collaboration as utilized in this study.

Collaboration is defined as a process where multiple individuals engage in "communicating, sharing, and synthesizing information…paramount to success, and accountability is accorded in the group" (Sriraman, 2009, p. 2). Collaboration requires interaction with others, and through communication, sharing, and synthesizing information individuals collectively solve problems and innovate. Paulsen (2008) described the collaborative process as "an interactive process involving individuals with varying levels of expertise who work together to solve a mutually-defined problem" (p. 313). Collaboration in the classroom requires the use of collaborative learning, a concept with origins stemming from the work of Vygotsky and Dewey (Sriraman, 2009). Collaborative learning is the process of collaboration set in the context of a classroom where learning occurs through social interaction and sharing information with others (Wang, Bruce, & Hughes, 2011) with a foundation rooted in social constructivism where learning occurs inherently in social situations, particularly with more advanced others. For the purposes of this study collaborative learning is what occurs during teamwork, as opposed to group work when students divide up work and complete their segment in isolation.

Teamwork

Teamwork is defined by Sorbero, Farley, Mattke, & Lovejoy (2008) as "two or more people who interact dynamically, interdependently, and adaptively toward a common and valued goal; have specific roles or functions; and have a time-limited membership...it is the cooperative effort by individuals in the team to accomplish a goal" (p. 2). Working as a part of the team is working as part of the collective, on a prescribed

task, with the need for continuous communication. Further, effective teamwork is rated against three variables: knowledge, skills, and attitudes. The knowledge "refers to concepts that underlie teamwork, skills are techniques used to achieve effective teamwork, and attitudes are components of the environment and culture that make effective teamwork more likely to be achieved" (Sorbero, et al., 2008, p. 2).

Teamwork is also contingent upon interpersonal skills, as Carson, Laird, Reid, Deeny, & Mcgarvey (2018) describe elements of effective teamwork include "each member possessing the confidence and competence for two-way communications of thoughts, feelings, mutual respect, and trust" (p. 21). The present study used the definition of the presence of teamwork as the ability of students to work with one another, continuously and for a limited time, with the hallmarks of teamwork centering on an ability to successfully navigate social interactions with members of the team, particularly in times of conflict and disagreement.

Groupwork

Groupwork, a term often thought to be interchangeable with teamwork, was not the focus of the present study; groupwork for the purposes of this study was defined as a set of students working simultaneously, but independently, on the same project with little to no communication and performed in collective isolation. The definition of the term groupwork as was used throughout the present study was developed through previous rounds of action research leading up to the present study, and had its basis in the language used by teachers and students alike.

Project Based Learning

Project-Based Learning (PBL) is a method of instruction with the potential to engage students through experiential learning, and according to Gary (2015) is "an approach particularly well suited to achieve more durable, contextual outcomes" (p. 1) for students. PBL sits in juxtaposition from pedagogies of indifference, described by Leat (2017) as classrooms that are largely disconnected from the expectations of the 21st century where students simply rotate between various classrooms in a day. In these classrooms, students sit passively, where meaningful questions are not asked, and "connections to daily experience, personal interests or contemporary issues are scarce" (p. 6). PBL offers a bridge between the traditional, anarchic classroom setting as described by Leat (2017) and the expectations of the 21st century: global citizenship, communication, collaboration, critical thinking. According to Wolpert-Gawron (2015), PBL is defined as "the ongoing act of learning about different subjects simultaneously. This is achieved by guiding students to identify, through research, real-world problem (local to global) developing its solution using evidence to support the claim" (p. 1) and includes collaboration in a team among the foundational elements of the practice.

Emotion

Emotion is often associated with biological reactions that are designed to prevent us from harm. As Adolphs (2010) wrote: "We see a bear; our heart rate accelerates, our blood pressure shoots up, and many other bodily changes transpire" (p. 549). Yet, emotions are also conscious experiences. In an 1884 essay, Psychologist and philosopher William James wrote that not only are emotions a physiological response, they are also a

reflection of our perceived, conscious experience of feelings (2010). Emotion is also separated from mood, as emotions are triggered by an event and last for a short period of time, as compared to a mood, which can be un-initiated by external occurrences and are longer lasting. Further, emotion in humans is made more complex through the ability to self-regulate emotion to an extent and demonstrate empathy when feeling the emotions of others. According to Mayer, Salovey, & Caruso (2008) emotions play an important role in our daily lives as they contain data that can contribute to facilitation of thought and guide our thinking and behavior. Gibert, et al (2017) list an intelligence in emotion among the necessary soft skills to succeed in academia and the professional world. This soft skill is described as an individual's ability to "actively create a pleasant human environment for work, show empathy, accountability, humility, friendliness, and unselfishness" (p. 81).

Emotional Intelligence

For many years debate has existed around the concept of an emotional intelligence (EI). Recent developments in the field of psychology have begun to cement scientific definitions and methods of measurement of the concept of EI, yet these developments have not slowed down the debate between academics and their conceptual differences. According to Matthews, Zeidner, & Roberts (2002) EI is "the competence to identify and express emotions, understand emotions, assimilate emotions in thought, and regulate both positive and negative emotions in the self and in others" (p. 3), a definition in line with the conceptualizers of ability emotional intelligence (ability EI), Mayer & Salovey (1997), which was the definition that framed the current study. Ability EI is also

seen as having potential to serve as "the medium by which educational reform can and finally will reach its full potential, across primary, secondary, and tertiary levels of schooling" (Matthews, et al., 2002, p. 4). For the purposes of this study, ability EI was used as both a foundational theory and tool in the intervention to improve the quality of teamwork experienced by students.

Purpose Statement

The purpose of this study was to build on previous cycles of research I conducted which explored students' and teachers' perceptions of teamwork and revealed that emotional issues are one of the foundational obstacles to collaboration in teamwork versus loosely working together in group work. The present study sought to: (1) explore students' perceptions of their role as part of a team during teamwork; (1a) investigate how perceptions differed by EI level; (2) examine how students' perceptions of their role in teamwork were influenced by being paired with more advanced (ability EI) peers or less advanced peers, based on ability emotional intelligence test scores; (3) determine if ability emotional intelligence related skills were developed over the course of a 7-week intervention.

The purposes of this study were achieved via an intervention that served to disrupt traditional patterns of group work as observed through previous cycles of research. In my US Government class, student participants were taught about emotion theory and skills related to emotion theory over the course of two weeks; then, students were required to produce a project with teammates I assigned. The terms 'teamwork' and 'group work' were discussed and differentiated, using the definitions defined above to guide those

discussions. The assigned teams' first obstacle was to come to consensus in choosing a Proposition in the state of California that appeared on the November 2018 mid-term elections ballot as well as the stance their team wanted to take with regard to that Proposition. Following this team decision, their goal was to create a commercial to persuade their audience to vote on the stance they had chosen to take. Unbeknownst to the student participants, teams were assigned based on ability EI scores and were strongly encouraged to practice the ability EI related skills we learned about during the first two weeks of the intervention. Participation in the intervention was mandatory for all students regardless of participant status as it was conducted as regular classroom assignments and activities.

Research Questions

Three research questions guided the conduct of this project. The three research questions were:

1. What were US Government students' perceptions of teamwork and their role in it during the course of a seven-week innovation?
    a. How did student perception differ by EI level?
2. How did pairing low- and high-ability EI students influence their perceptions of their role in teamwork?
3. How and to what extent were students' ability EI related skills and perceptions of working in teams developed over the course of the intervention?

CHAPTER 2

THEORETICAL PERSPECTIVES AND RESEARCH GUIDING THE STUDY

He who knows the universe and does not know himself knows nothing.

--Jean de La Fontaine, 1697

The present chapter provides an overview of prominent theories and related research relevant to the present action research study. The focus of the study was on the relationship between ability emotional intelligence and student perception of effective collaboration during teamwork in a twelfth-grade, Project-Based Learning classroom setting. The present chapter introduces the literature on ability emotional intelligence, including recognition of divergence in use of the term, along with a brief history of this construct. Also included in the introduction is the identification and discussion of sociocultural theory as originally posited by Lev Vygotsky (Kozulin, 2002) with an emphasis on the emerging sub-theory of collaborative learning. I discuss the first theoretical perspective, ability emotional intelligence (EI) and the ability EI established framework, along with support provided by a number of related-research studies on the topic. The second theoretical perspective, sociocultural theory, is reviewed along with related research supporting sociocultural theory with an emphasis on collaborative learning. Then connections between ability EI and sociocultural theory with an emphasis on collaborative learning are described. Research from the current action research project is then presented, followed by implications based on the previously discussed theoretical frameworks and related studies.

Literature Review

The ability to work in teams is a valuable skill and its importance is consistently recognized in the classroom and in professional settings of the 21st century (Wang, MacCann, Zhuang, Liu, & Roberts, 2009). As a result, teachers assign group work in their classrooms in an effort to mirror the reality of the professional world. Further, a consensus is shared among scholars that "student teams can represent active learning environments, and that teamwork can help students learn critical skills valued by potential employers" (Sashittal, Jassawalla, & Markulis, 2011, p. 93). Working in groups to complete challenging tasks, such as problem-solving projects, have a powerful effect because the benefits to working with others offers opportunities to combine resources, establish and maintain a sense of camaraderie, and divide the tasks to reduce the overall workload (Sashittal et al., 2011). Results show that those working in groups in the classroom can outperform individuals working independently (Stelzer & Coll-Reilly, 2010). Stelzer & Coll-Reilly (2010) demonstrated evidence that supports this assertion as they note that when taking quizzes, groups outperform individual students and both the best and worst individual performers benefit from working in groups, although the worst performers benefit greater than does the best performer.

A study by Rogat & Linnenbrink-Garcia (2011) found high quality social interaction in groups results in high quality social regulation of information and tasks, enabling successful sharing of ideas and information while working jointly. In conjunction with previous studies, this finding corroborates the theory close relationships exist between learners' active participation and the production of collaborative learning

during social interaction (Isohatala et al., 2017). Rogat & Linnenbink-Garcia (2011) also identify four mechanisms that facilitate the quality of social interaction within groups including: differences between positive and negative socio-emotional group interactions; collaborative and non-collaborative interactions; the synergy of the processes of regulation; the extent to which the group share in the regulation of information and learning through reciprocation. In sum, the study asserts the socio-emotional component in the quality of social interaction in a learning context is a predictive factor in learning quality. To reach true negotiation of the collaborative processes, all group members must engage in reciprocal participation.

Ucan & Webb (2015) found that when a student group shares the regulation of monitoring, motivating, and emotions, the group is able to simultaneously reestablish socio-emotional balance to the group and maintain the reciprocity of social interaction. Conversely, the potential disjointedness of student groups is a powerful determinant in the opportunity for group success and engagement. For each group member to be involved an affective aspect of security must be met along with structures for managing conflict within groups, because negative socio-emotional interaction has an adverse impact on overall shared learning environments.

As more is learned about the benefits of collaboration, the 21st century classroom in the United States is experiencing a shift away from stand-and-deliver, teacher-oriented pedagogies toward an emphasis on social interaction, group work, and problem-based learning reflective of the modern world in which students will matriculate into. Barab & Plucker (2002) echo this shift toward collaborative learning, noting, "learning is a process

that involves becoming a different person with respect to possibilities for interacting with other people and the environment" (p. 173). Students are more often required to work with their peers to answer challenging problems, using collaboration and critical thinking to achieve understanding. School districts have incorporated skill-based acquisition as a high priority, including creative thinking, collaboration, and global citizenship (San Jose Unified School District, n.d.).

Schools are making inroads to prepare students for their futures and recognize they are also the institution that set students up for what we expect them to know and be able to do when they leave the system. As noted by Leat (2015), "the experience of school can have profound effects on how people see themselves, how they conduct their lives, how they see and interact with others who are different from themselves…" (p. 3), and further, that schools are responsible for fostering skills related to these lifelong effects. Yet, while students may have the capacity to think critically, they often lack the ability to work well with others as a result of the traditional model of schooling that sees students as passive receivers of content knowledge and remains strongly rooted not only in teaching practices but reflected in the ever-present focus on national and state test scores.

While skills-based goals have been set by districts across the US, often they are not manifested as a product of the classroom environment. Leat (2015) echoes the concern that students face challenges in entering the 21st century workforce that requires skill in "adulthood, citizenship, democracy, and work" (p. 5) after leaving a 20th century educational system. Although 21st century-oriented teaching pedagogies may be available

for teachers to facilitate student collaboration, such as Project-Based Learning, students' ability to collaborate, work productively with others and co-construct knowledge has not received sufficient attention to fully develop these skills.

The specific skill of collaboration leading to productive teamwork can be targeted and grown through the acknowledgement and development of ability emotional intelligence related skills. Sung (2015) claims emotional intelligence (EI) is the cohesive agent that binds people together and facilitates collaboration. EI represents a broad category of interrelated abilities, including the recognition of emotional states in the self and others and understanding how ability EI levels influence emotional perceptions and behavior. Although the potential for productive teamwork in the classroom exists, it is often overlooked or is an underserved area of educational development (Sung, 2015). Yet it is the system of education that can teach skills related to enhanced collaboration during teamwork, and I posit this can be done through the intentional development of ability emotional intelligence related skills. Students as individuals possess the power of agency, to take the initiative and produce personal growth, insofar as students can be active directors of their lives and environments, according to the social cognitive theory posited by Bandura (2002).

Further, the widespread use of various school districts' requisite of global citizenship requires an active ability in students who have the capacity to recognize their own emotions and the emotions of others, as well as the need to develop students who are able to "be aware of their capacity to regulate emotions, think constructively, galvanize strength in others, and communicate to improve human conditions" (p. 61) particularly as

collaborative methods are on the rise. It is through collaborative learning processes that individuals have the opportunity to work collectively with their teammates to practice a sense of agency, or empowerment in their personal development, learning to contribute to group processes through specific expectations and teacher-driven support. In collaborative learning, students work together as a collective entity, sharing goals and developing a sense of social responsibility through practicing the agency of *we* as regulation, rather than *I* or *you* (Schoor, Narciss, & Korndle, 2015).

Theoretical Perspectives

Two theoretical perspectives guided the present study. One theoretical perspective in which this study was anchored is the theory of ability Emotional Intelligence (EI) as established by Mayer & Salovey (1990) and expanded upon by other emotional intelligence scholars such as David Caruso and Daniel Goleman. This action research study used the initial description of ability EI articulated in the Mayer & Salovey (1990) Four-Branch Model of EI henceforth referred to as ability EI. Complementing the theory of ability EI is the second theoretical perspective, collaborative learning situated in sociocultural theory, as established by Lev Vygotsky (1978).

Ability Emotional Intelligence Theory

The Schism. Until emotional intelligence was introduced the discussion around intelligence as a construct was primarily founded in the ideas of Galton and Kupe, psychologists in the late 19th century who studied higher order thinking and cognition. Western intelligence tests originated from the ground work laid later by Alfred Binet with the eventual development of the Wechsler Scale (Frank & Eysenck, 1986), an

intelligence test created to help educators place children based on their intellectual abilities. It is important to note that the intent behind the Western intelligence tests were rooted in a veiled attempt to justify racism, and the controversy around any form of intelligence testing remains inevitably tethered to on-going controversy. Decades later, the concept of EI emerged out of long-standing discussion and debate around the conceptualization of intelligences, when, beginning in 1920, "Thorndike suggested the existence of a social intelligence" (Mayer, Salovey & Caruso, 2008, p. 505) that includes the ability to understand and manage individuals and to behave sensibly in their relations with other individuals. From this early concept comes multitudes of interpretation around types of intelligences that break away from traditional understandings of cognitively based, fluid or crystalized, intelligence concepts with fluid intelligence demonstrating the ability to be grown and developed while crystalized intelligence is considered relatively static.

The idea of emotional intelligence was furthered in the 1970s when psychologist Paul Ekman argued that specific types of emotional expression, such as facial expressions, were universal whereas others were appraised individually based on cognitive influences, consequently generating respondent emotional reactions (Ekman & Friesen, 1975). The implication inherent in the individual's appraisal of emotions is the individuals' perception guiding their reactions to perceived behavior, whether or not the perceptions are accurate (Mayer, et al., 2008). Therefore, individuals' ability to perceive their emotions and the emotions of others directly affects the behavior that follows this perception, for better or for worse.

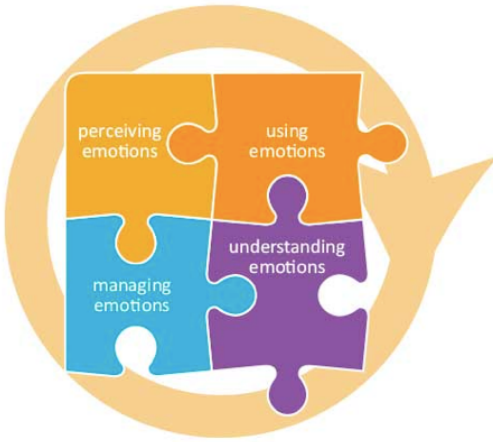
In the 1980s Psychologist Howard Gardner posited the theory of multiple intelligences, acknowledging one type of intelligence that had been long established by the Wechsler intelligence test was too narrow and limited to describe the capacity of the human brain. Theories about varying types of intelligences, including EI, developed as time progressed and emotionally based concepts became mainstream (Mayer et al., 2008). By the 1990s a community of scholars concerned with EI and related perspectives resulted in numerous options for how best to measure and interpret EI. The divergence in these perspectives was substantial enough that "the wide diversity of those interested in EI (was) matched by the wide diversity in the conceptions of EI they employed" (Mayer, Roberts, & Barsade, 2008, p. 509), reducing to some extent the credibility and validity of EI as a construct. The division created by the diversity in interpretation of EI led to disappointment among some scholars as the variety of EI theories to choose from left many with poor "theoretical and construct validity… (they are) scientifically challenging" (Mayer et al., 2008, p. 505). Consequently, the term EI became associated with a hodge-podge of theoretical backgrounds and the scientific approach to measuring EI became watered down, linked with popular culture references and self-help books. However, within the EI community, a cohesive and scientifically valid theory emerged (Mayer et al., 2008) in the Four-Branch Ability Model.

Ability Emotional Intelligence and The Four-Branch Model. The current action research study drew upon the framework as set forth by Peter Salovey & John D. Mayer's (2008) Four-Branch Model, identifying ability EI and defining ability EI as "emotional abilities…falling along a continuum from those that are relatively lower level,

in the sense of carrying out fundamental, discrete psychological functions, to those that are more developmentally complex and operate in the service of personal self-management and goals" (p. 506). Proponents of the Four-Branch Model advance the notion that four hierarchical categories work in conjunction with one another to create a measurement of ability EI. Further, it is theorized that ability EI is established in childhood and develops over the course of a lifetime with the accumulation of emotional experience, with the implication that while EI has not been proven to be grown, EI related skills are malleable (Salovey & Mayer, 2008). Additionally, Salovey & Mayer suggest ability EI skills build on one another as they develop and this occurs simultaneously. While lower level skills develop they directly influence individuals' abilities to cultivate higher-level EI skills (Mayer, Roberts, et al., 2008). According to Schneider, Lyons, & Khazon (2013), these skills "build hierarchically, from the ability to perceive emotions up to managing emotions" (p. 909). Therefore, potential exists for EI related skills to be developed strategically over time.

To measure individuals' ability along the ability EI continuum, four hierarchical categories are used to determine individuals' abilities to: "(a) perceive emotions in oneself and others accurately, (b) use emotions to facilitate thinking, (c) understand emotions, emotional language, and the signals conveyed by emotions, (d) manage emotions so as to attain specific goals" (p. 506).

Figure 1. *Mayer and Salovey's Four-Branch Model* (Emotional Intelligence Worldwide, retrieved from http://emotionalintelligenceworldwide.com/work/msceit/)



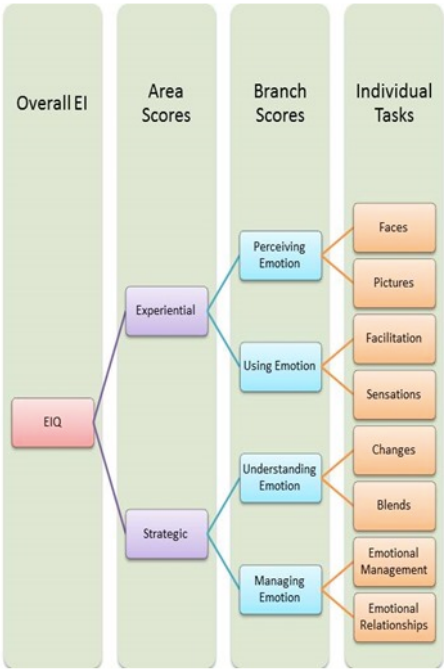
The present action research study focused on all four branches, with each branch considered in data collection and analysis. Scales that measure these constructs have been developed to assess where individuals fall on this continuum, with the MSCEIT (Mayer-Salovey-Caruso Emotional Intelligence Test) and MSCEIT-YRV (Mayer-Salovey-Caruso Emotional Intelligence Test/Youth Research Version) serving as the primary and reliable measurement tools for integrated theories of EI. Multiple scholars have tested the MSCEIT for its validity, as it has emerged from a sea of so-called EI tests as the measurement with the most scientific significance.

Rossen & Kranzler (2008) support previous findings that MSCEIT scores correlate with predictive behaviors, such as "positive correlations…with academic achievement, psychological well-being…and peer attachment" (p. 60) while negative correlations have been found between MSCEIT scores and deviant behavior, such as the

use of drugs and alcohol. Additionally, Rossen & Kranzler (2008) conducted a study to determine if the MSCEIT holds incremental validity to predict real-life outcomes while controlling for the Big 5 personality factors found in psychology. While the results did not demonstrate statistical significance for academic achievement, it did demonstrate statistical significance "to the prediction of positive relations with others and alcohol use" (p. 63). Further, the study found the MSCEIT to support the incremental validity as being "comparable to or somewhat better than that of cognitive group factors" (p. 64).

Figure 2 demonstrates the structure of the MSCEIT and is broken down into segments which are used for measurement.

Figure 2. *Structure of the MSCEIT.* (Retrieved from https://www.psycholawlogy.com/2014/05/13/importance-emotional-intelligence-factor-success-professional-development-house-counsel/)



The overall ability EI score is computed based on the range of scores collected from the area scores. This includes experiential emotional ability which concerns emotional input or emotional data processing, and strategic emotional ability, which concerns emotional output or behavior, leveraging the data received in the emotional input. The branch or ability scores provide measurement for each of the area scores; ability to perceive emotions and use emotions is computed for experiential EI; whereas ability to understand emotion and manage emotion is computed for strategic EI. Each of the individual task scores represent the test items from the MSCEIT that test-takers engage with to measure their ability scores. Pictures (reading the environment) and faces (reading people) are used to compute perceiving emotion scores; facilitation (matching a mood to a task) and sensation (emotional empathy) tasks are used to determine using emotions ability scores; changes (affective forecasting) and blends (emotional vocabulary) are used to compute understanding emotion ability; and emotional management (managing own emotion) and emotional relations (manage others' emotions) determine the manage emotion ability.

Ability emotional intelligence manifests as individuals' abilities to practice accurate interpretation and reasoning about emotions about oneself and others, as well as the ability to use emotional knowledge to enhance thought (Mayer, et al., 2008). Lopes, Brackett, Nezlek, Schutz, Sellin, & Salovey (2004) differentiate emotional intelligence theory from personality theory by positing that EI "emphasizes acquired competencies that help people to regulate their emotions and manage social interaction" (p. 1020), while also acknowledging that the Big Five personality traits can be influential and must

be controlled for in studies. Therefore, the emphasis on the study of EI is on the ability to manage the individual's emotion-based thinking and performance, which carries with it a continuum of abilities. In terms of relation to other types of intelligences, Mayer, et al. (2008) argue ability-based EI measures are related most closely to verbal-comprehension and/or crystallized intelligence.

The question, then, becomes, can ability emotional intelligence be developed over time? An experimental intervention study performed by Pool & Qualter (2012) suggest the answer to this question as yes, emotional intelligence can be developed, even in a short amount of time, although there are few studies available to support these findings. The study was based on Salovey & Mayer's Four-Branch Model, using the MSCEIT (Mayer-Salovey-Caruso Emotional Intelligence Test), the measure for EI and the ESE, the measure for Emotional Self-Efficacy. The MSCEIT measures four major emotional abilities, including "perceiving emotions, using emotions to facilitate thinking, understanding emotions, and managing emotions" (Lopes, et al., 2004, p. 1019). Of the emotional intelligence theories, the Mayer & Salovey model was most appropriate for the Pool & Qualter study because it directly measured emotion-based abilities assessed through performance tests.

The Pool & Qualter (2012) study was conducted over an eleven-week period with one, two-hour class per week. Results from this study revealed positive changes in both variables, EI and ESE, in the intervention group, and it was found that "it is possible to improve ability EI particularly in relation to understanding and managing emotion" (p. 310). The results obtained by Pool & Qualter were promising, because numerous EI

studies have demonstrated the positive effects observed for individuals with high EI, as a "number of findings indicate that having high EI leads others to perceive an individually more positively" (Mayer, et al., 2008, p. 522). The outcomes obtained in a variety of EI studies supported the greater EI theory that individuals with high EI tended to have more success in interpersonal relationships, work performance, academic performance, and overall physiological and psychological well-being (Mayer, et al., 2008).

Malleability of Emotional Intelligence Skills. Within the research community that examines intelligence there is disagreement about the ability to develop intelligence. Entity theorists, who believe intelligence is fixed, generally agree that various intelligence categories, including cognitive, emotional, and behavioral domains, are difficult to change and are relatively permanent. By comparison, incremental theorists, who believe intelligence is malleable and can be increased with effort (Haimovitz & Dweck, 2017) suggest these same domains are flexible and can be explicitly developed and changed over time (Cabello & Fernandez-Berrocal, 2015). With the belief in the malleability of intelligences, including emotional intelligence, incremental theorists "tend to be more persistent and strategic than those with entity theories of intelligence" (p. 2) and, based on the belief that intelligence can be grown, are more proactive in attempting to grow it in oneself and others. However, it is noted that recent meta-analysis studies have demonstrated the potential for the actual ability EI as well as skills related to EI to be affected moderately and positively through intervention, as one article by Mattingly & Kraiger (2019) discovered. Additionally, emotional intelligence theorists Mayer & Salovey established that emotional intelligence has its beginnings in childhood and

develops over time with more advanced abilities maturing as the individual grows and matures, although strategic and intentional development of EI ability has not been determined. Schneider, Lyons, & Khazon (2013) note that for a construct to be labeled intelligence it must be related to ability, which develops with age. For the purposes of this study, the viewpoint suggested by entity theorists that intelligence is fixed but skills related to the intelligence is malleable was used.

Social Outcomes: Ability EI. As determined through various studies ability EI plays a role related to social interactions in individuals' personal and professional lives. A qualitative study by Clarke (2010) set out to discover how ability EI influenced individuals working in groups in a classroom setting, by studying 80 international MBA students over a 14-week period. Findings from Clarke's (2010) study revealed that the emotional awareness of self and of others, demonstrated by some of the individuals' intervention-based diary entries, were found to facilitate thinking, problem solving and management of conflict in the teams, answering the first research question. Further, the reflection of their emotions and those of others prompted action planning or the desire to take the initiative and adjust their behavior to increase productivity and enhance interpersonal relationships within the group. Additionally, students' diary entries provided evidence that not being able to manage one's own emotions had a negative consequence within the group that led to conflict. The second research question, with regard to how EI ability was activated in team learning contexts, was supported by the findings that by enhancing social competence in interactions through critical reflection,

the greater social integration into the team created opportunities for enhanced social learning around the project at hand.

Additional studies demonstrate the social advantages of high EI scores in a variety of categories. In these studies, high ability EI is positively associated with higher quality social interactions among children and adolescents because scores correlated positively with good social relations and negatively with deviance (Denham et al., 2003; Eisenberg et al., 2000; Fine et al., 2003; Izard et al., 2001). The pattern of higher quality social interactions for individuals with higher EI scores continue into adulthood. For example, Brackett et al. (2006) and Lopes et al. (2004) found high EI influences a greater self-perception of social interactions in individuals and less destructive interpersonal strategies in relationships. Better social relationships during work performance have also supported the advantage of high EI because it was correlated with more positive work performances and negotiation outcomes (Cote & Miners, 2006; Elfenbein et al., 2007; Rubin et al., 2005). In addition to these findings, greater academic performance (Barchard, 2003; Izard et al., 2001; O'Connor & Little, 2003), better psychological well-being, greater satisfaction with life (Bastian et al., 2005; Gohm et al., 2005; Matthews et al., 2006), and better family and intimate relationships (Brackett et al., 2005; Carton et al., 1999) are associated with individuals who possess high EI ability scores.

Empirical research about ability EI as anchored in the theory of the Four-Branch Model demonstrates evidence that EI "consistently predicts positive social and academic outcomes in children" (Mayer, et al., 2008, p. 521). Moreover, there is also a demonstrated consistency in negative predictions because low EI consistently predicts

behavioral issues even when controlling for variables such as socioeconomic status and gender. Mestre, et al. (2006) found adolescent students in Spain who scored higher on the MSCEIT Strategic test tended to be seen as "friends" by their classmates.

A study conducted by Lopes, et al. (2004) supported these findings through a diary-based study conducted over a two-week period in Germany. Participants recorded and reported on any social interaction with members of the opposite sex that lasted longer than 10 minutes daily for two weeks. Results indicated students' scores on one or more of the four branches of EI were used to positively predict the students' perception of the interactions in which they participated in. In sum, it was found that an association existed between ability measures of emotional management and the quality evaluation of social interactions as reported by the participant and peers. Along with positive relations between the MSCEIT and perceived quality of interactions with the opposite sex, the Lopes, et al. (2004) study also revealed evidence "for the predictive and incremental validity of the MSCEIT" (p. 1030), reaffirming the credibility of the measure to indicate levels of EI abilities.

Sociocultural Theory

Vygotsky, Sociocultural Theory, and Social Constructivism. As noted by Vygotsky (1978), individuals learn through social interaction. For instance, individuals who are having difficulty with an assignment receive help and learn from more advanced peers. In the 21st century classroom it can be said that "cooperative and collaborative learning play a major role in today's teaching practices in both school and university" (Schoor, et al., 2015, p. 99). Further, Panadero & Jarvela (2015) note that a general shift

in pedagogical classroom practices results in an increase in interest in group-based work. In recent decades the surfacing of collaborative learning environments has become common practice as benefits of collaborative learning are enabled as compelling "opportunities for shared knowledge construction and productive collaborative interactions" (p. 191).

Learning in groups has become common practice as individuals worked with others to achieve shared understanding, goals, products, evaluations and standards. Lev Vygotsky is largely responsible for fostering connections between learning and education via the sociocultural theory (Mahn, 1999). In consideration of the origin of the individual's developmental consciousness, Vygotsky places emphasis on the intersection of elements such as environment, culture, language, the use of tools, and society as being interlaced. As such, the individual's meaning making experience is a product of the interplay between these variables. Further, sociocultural theory situates the individual student in a context where learning occurs as a social process, through production of meaning with others referred to as the Zone of Proximal Development (Lin, 2015).

The Zone of Proximal Development (ZPD) is defined by Vygotsky (1978) as "the distance between the actual development level as determined by independent problem solving and the level of potential development as determined through problem solving under adult guidance or in collaboration with more capable peers" (p. 86). ZPD sheds light on the individual student's potential to enhance their understanding of meaning with the help or an adult, such as a teacher, or a more advanced peer (Mahn, 1999), whether

the understanding of meaning is in the content area of mathematics, or, as the present study suggested, ability emotional intelligence related skills.

Vygotskyian epistemology centers on the notion that the individual is inherently influenced and developed through the co-construction of knowledge as the individual is in an "environment…mediated by the sociocultural world of humanity" (Kozulin, 2002, p. 8). Within an educational context the student's cognitive development is enabled in part through social interaction with more advanced peers and teachers. As such, Vygotsky has contributed greatly to social constructivism as knowledge is co-constructed "in mediated accordance with the context and experience with peers" (Lin, 2015, p. 12). The present study emerged from the ontological belief that learning occurs inherently through collaboration with others, placing emphasis on the significance of the quality of social interaction experienced during teamwork in a classroom setting and the importance of pairing students with more capable peers.

Collaborative Learning. As sociocultural theory indicates, learning is not an individual process, but, rather, is situated in an environment with others who influence the learning process. As such, experiences in groups where students negotiate and align despite differences to form a collective perception demonstrate the process of collaborative learning (Isohatala et al., 2017). This 'group' control of learning results from the establishment of these aligning perspectives as the learning task is carried out, "through shared and negotiated, iterative fine-tuning of cognitive, behavioral, motivational and emotional conditions" (p. 11). Isohatala et al. (2017) notes "participation in social interaction is the prerequisite for creating shared understanding"

(p 12). According to Hadwin et al. (2011), learning extends beyond the individual process to the contextual and social processes as well. However, scholars conducting research in this area recognize "many learners lack the needed regulatory skills and struggle to develop them when they work on complex collaborative tasks" (Jarvela, et al., 2016, p. 265). The current action research study focused on an integration of the ability emotional intelligence development and sociocultural theoretical frameworks as a method of resolving the challenge many learners experience with regard to working collaboratively on complex tasks (Jarvela, et al., 2016).

In situations where students work with other students there is a divergence among perspectives as individuals develop different schemas of the world based on their personal experiences. The diversity of perspectives enabled through a collection of schemas enhances social interaction in the classroom, allowing for extension of thought beyond what an individual student would be able to develop independently (Isohatala, Jarvenoja, & Jarvela, 2017). Collaboration is broadly defined by Nokes-Malach, Richey, & Gadgil (2015) as "active engagement and interaction among group members to achieve a common goal" (p. 646). Further, collaborative learning is defined by Dillenbourg (1999) as "a situation in which two or more people learn or attempt to learn something together" (p.1). Therefore, the goal of collaborative learning is the co-construction of knowledge, which is shared among members of the group (Schoor, et al., 2015) and falls in line with Vygotsky's sociocultural theory.

The situative approach focuses on the individual as situated within a larger system of learning; not on the individual alone. Systems are extended to the group and also to

communities of practice as demonstrated by practices of group members, with materials serving as tangible representations or tools of knowledge of the system (Schoor et al., 2015). Nokes-Malach, et al. (2015) theorize various social and cognitive mechanisms exist to support and to cause failure in settings where there is collaboration among students. Social mechanisms that influence failure in collaborative learning include: (a) social loafing, or the belief held by some students that other group members will pick up their slack and therefore they do not feel responsible to contribute to the co-production of knowledge; and (b) fear of evaluation by group members, stemming from a sense of discouragement from contributing to the conversation due to fear of being negatively evaluated by their group members. Social mechanisms with the potential to positively influence collaborative learning include: "observational learning, increased engagement, joint management of attention, construction of common ground, and negotiating multiple perspectives" (p. 648). Through the collaborative process, learners can participate in constructive behavior to generate inferences about the material by applying the concepts of social mechanisms such as construction of common ground and through the negotiation of multiple perspectives.

Implications

Ability emotional intelligence and sociocultural theory, with an emphasis on collaborative learning, weave together to form an intricate tapestry with vast potential for student enhancement in collaborative teamwork. Based on review of the literature and the intersection of ability emotional intelligence and sociocultural theory, there are a number of implications for the present study. First, the literature suggests that ability EI related

skills can be developed over time and is a valuable development, as research has shown a statistically significant correlation between MSCEIT scores and sociability. Further, sociability has been demonstrated to be a significant component in successful collaboration. Thus, for the current study, I devised an intervention to foster the development of ability emotional intelligence related skills among high school students while working in teams of more EI-capable peers per the tenants of the Zone of Proximal Development.

Additionally, the review of the literature indicates that the development of ability emotional intelligence-related skills can be used as a tool in collaborative teamwork can increase the effectiveness of collaborative learning in a social context. The ability EI skills can be used to manage the work of the group to allow for more effective, productive outcomes from collaborative work as learning occurs through social interaction. The development of ability EI- related skills can help students navigate uncomfortable social situations within their teams, aide them in resolving conflict, and enhance the confidence of students to participate effectively in teams. Additionally, students may benefit from the development of their ability EI-related skills as they will consciously consider the emotions of themselves and their peers while working together while learning to manage emotions to achieve a goal, foundational elements in social interaction and collaborative learning.

CHAPTER 3

METHODOLOGICAL APPROACH

The primary purpose of this study was to improve student perception of their ability emotional intelligence related skills while working in teams, in order to have more effective and positive social interactions leading to collaborative teamwork while working on a project-based learning project and thus simultaneously improving their perception of working with others. Specifically, the purpose of this study included the following questions: (a) What were US Government students' perceptions of teamwork and their role in it during the course of a seven-week innovation? (i) How did students' perceptions differ by EI level? (b) How did pairing low- and high-ability EI students influence their perceptions of their role in teamwork? (c) How and to what extent were students' ability EI related skills and perceptions of working in teams developed over the course of the intervention?

Epistemology and Methodology

The current study stemmed from an understanding and application of constructivism, an epistemological stance founded in the individual's construction of knowledge through experience and interactions with others (Crotty, 1998). Constructivism "asserts that learners construct knowledge by making sense of experiences in terms of what is already known" (Brandt, 1997, p. 113). The ability to work well with others is an age-old concept. One does not exist in and of oneself; meaning only exists insofar as an individual creates it. Experiences are constructed through the creation of meaning and social interactions with others. The individual is the

architect responsible for the construction of their perspective, worldview, and knowledge. The current study attempted to explore individually constructed perspectives about teamwork in a high school classroom, and to what extent these constructed perspectives were extended and altered through an intervention that developed ability emotional intelligence related skills. Further, the current study attempted to understand how the individual's experience working as part of a team affected the individual's perception of working with others to achieve a common goal.

The importance of this study extended beyond the potential to develop highly effective teams through enhanced practices of individuals working together. Through this experience participants were encouraged to widen their perspectives and embrace teamwork, enabling the opportunity for enhanced learning in concert with the epistemological tethering of constructivism, the individuals' "meaning-making activity of the individual mind" (Crotty, 1998, p. 58). The present study attempted to explore attitudes toward teamwork by unearthing previous experiences in group work in the classroom, and explored changes in perceptions of teamwork as students navigated through the intervention. The focus of the study was in part on the individual's perception of their performance within a larger team. By design, the study examined the individual's construction of knowledge based on previous experiences in conjunction with their experience during the intervention that influenced this construction of knowledge and ultimately, their perceived reality.

The constructivist framework dictates the individuals' experience, as created by the individual, is "as valid and worthy of respect as any other" (Crotty, 1998, p. 59) and

therefore although one individual may have negative or neutral perceptions of working in groups based on previous experiences, this does not mean this individual cannot reconstruct their realities based on present or future experiences. Constructivism demonstrates that the individual's perspective is heavily influenced by past experiences but also implicates the ability of current experiences to aide in the reconstruction of perceived reality. Therefore, in order to determine changes in the current perception of students' attitudes toward teamwork in the classroom, I used carefully crafted journal prompts as a methodological tool throughout the intervention to capture the constructed experiences of students. The journal entries were written twice a week over a five-week period for a total of nine entries per student, including the baseline entry, which enabled the window into the mind of the student and shed light on their perception of reality. A secondary methodological tool measured alterations in the constructed realities of students via individual, semi-structured interviews that took place with a focal sample of 11 participants. The goal of the individual interviews was to determine alignment between interview responses and the coding manifestations from journal entries, to determine consistency in any alteration in constructed realities.

The current study aimed in part to demonstrate the importance of the perception of the individual toward teamwork within the larger social context of teamwork in the classroom. Projects in general may enable students to work on problem solving together, and through collaboration and peer to peer discussion, meaning can emerge and answers to these problems are created. However, the issue I have encountered over the last eight years using PBL is the attitude of students going in to teamwork, as well as the quality of

team effectiveness and collaboration. While some teams are skilled at managing their roles within an assigned group, many students struggle. Once in team problems arise students appear to have a difficult time confronting the conflict and recognizing the role they play in the ability of their group to function. The current study further examined the individual's construction of their reality in teams during teamwork. This examination opened a door to understanding the students' individual experiences working within a group of others, and the study attempted to determine if students' realities were impacted by an awareness of emotions in themselves and others, and thereby experience an increased effectiveness as a functioning group.

Setting. The setting of this action research study was a twelfth-grade high school classroom in San Jose, California. This was my eighth-year teaching at this school and eighth-year utilizing Project-Based Learning pedagogy. The student population is predominantly Hispanic (72%), low-socioeconomic status (54%), and the graduation rate for the previous school year was 96% with a University of California-California State University eligibility rate of 45% (www.greatschools.org/california/san-jose). The school in which this study was situated was previously a Performing Arts Magnet and has a favorable disposition toward the use of Project-Based Learning (PBL) pedagogy. The classroom in which this study took place is a yearlong course with a combination of one semester of United States Government and Politics and a second semester of Economics. I have worked with the George Lucas Education Foundation's pre-fabricated AP Government course materials for the last five years and implemented these in the regular US Government class. The PBL lessons focus heavily on collaboration, role-play, and

problem solving based on government concepts. In addition to the use of PBL methods to teach US Government concepts, I use direct instruction, summative, and formative assessments.

Sampling. The participants for this study included 34 out of 36 high school seniors in my classroom during the first period of the school day, between the ages of 16 to 18 years old with a subset of 11 focal students who served as a focused sample for qualitative data analysis. Of the 34 participants were 19 males and 15 females. Although 12 participants were initially selected to be a part of the focal group, 1 participant was discounted from the focal group due to more than 10 absences throughout the intervention. The final 11 focal participants were 4 females and 7 males. All of the students entered my US Government and Economics class as high school seniors, having previously spent their Junior year of high school taking the United States History course which is strictly teacher-directed and reliant upon direct instruction. Of the student participants in the sample, there were some students who received aid from the school and local government agencies to combat issues that stem from low-socioeconomic backgrounds; students who were on Individual Education Plans (IEP); and students who had gifted academic status.

I recruited students from my first-period class by providing the opportunity to be participants in the study. I distributed and collected parent consent and student assent forms, for which submission was mandatory in order for the student and parent to indicate whether they would volunteer to be a part of the study or not. Although all students received the intervention treatment as it was integrated into regular classroom

assignments and activities, permission was needed to be eligible for data collection. I also utilized purposeful sampling techniques as participants were teamed together and targeted for teaming purposes based on their MSCEIT-YRV (Mayer-Salovey-Caruso Emotional Intelligence Test-Youth Research Version) scores as well as the self-report adapted SREIS (Self-Rated Emotional Intelligence Scale), which measured student perception of their emotional abilities.

The sample size for quantitative data was 34 participants out of 36 students in my class as 2 students opted out of participating. Of the 34 participants the overall class breakdown of emotional intelligence ability scores was: high-EI (7 students); medium-EI (22 students); low-EI (5 students). The score range of the class as a whole was not evenly split and therefore when purposefully pairing students to work with more advanced peers, not all teams were able to follow the 2 high, 2 medium, 2 low structure. Instead, two teams were chosen to have an even balance of scores for purposeful sampling and further investigation through in-depth qualitative research. The remaining students were teamed as closely as possible to an even number of high-, medium- and low-EI students.

I selected a focal sample of 12 students from the 34 participants who were chosen to provide qualitative data through interview and reflective journal analyses, although 1 of the original 12 students was discounted from qualitative research due to more than 10 absences throughout the 7-week intervention. As much of the present action research study was geared toward qualitative data, purposeful sampling was appropriate to capture the experiences of a small number of participants (Ivankova, 2015). The 11 students in the focal sample were chosen based on the following factors: each focal student was

working in a team with an even distribution of ability EI level teammates (2 high, 2 medium, 2 low); attendance record; consent and assent form submission. While purposeful sampling does not lend itself to generalizability, it did allow in-depth exploration of individual experiences that were used to complement the quantitative data in the present study.

Table 1. *MSCEIT-YRV Sample Participant Scores.*

MSCEIT-YRV Score Range	Gender	Sample Participants Group 1	Gender	Sample Participants Group 2
High (115+)	F	143	M	143
	F	120	F	115
Medium (86-114)	M	99	M	102
	F	98[3]	M	99
Low (-85)	M	81	M	83
	M	75	M	79

Role of the Researcher

For this study I was both the primary instructor and the researcher. I provided in-depth materials and instruction to students as was expected in an any academic content course. As such, I played a role that included being both an insider to the processes of the study and an outsider in terms of data collection and analysis. I collected baseline data from an ability emotional intelligence (EI) assessment, using the Mayer-Salovey-Caruso Emotional Intelligence Test-Youth Version (MSCEIT-YRV). I also lead the course and

[3] The focal group participant who was dropped from the focal group analysis due to excessive absences.

implemented the intervention, which included the explicit development of ability EI related skills. Additionally, I conducted individual post-intervention interviews with eleven students that included a mix of initial ability EI scores and conducted a retrospective pre- and post-intervention survey assessment using the same Likert-scale ability EI related skills survey (SREIS) and analyzed participant journal entries that were kept throughout the intervention.

The qualitative aspect of this study saw me situated as both teacher and researcher, which had strategic and ethical concerns. The qualitative process is interpretive and requires consistent and intensive experience with participants in order to dig deeper into their constructed realities. As an experienced PBL teacher for eight years, I remained aware of the potential for my past experiences with successful and unsuccessful projects to influence the questions I asked during interviews, as well as the biases I held going into this study based on this previous experience. I was sure to remain cautious that this bias may lead me to actively seek out data that aligns with said bias (Creswell, 2014). Further, I remained aware of the adolescent experience as my background in Psychology enabled a deeper understanding of the adolescent psyche, while remaining cautious that this educational training could also have an impact on how I approached the questions and interpretation of answers during the individual interviews.

Intervention

In my experience of teaching PBL-based lessons for the last eight years, the most substantial concerns that have arisen have been with respect to enabling effective and productive collaboration where students take the initiative to work together,

communicate, resolve conflict, and learn simultaneously. Students appear to have the most difficulty with the navigation of social interactions and working constructively to reach a pre-determined goal with their peers in large part due to the lack of leadership skills necessary when working in small teams. Over the years I found myself attributing this challenging aspect of group work to being age-related, assuming that the awkward conversations with group partners resulted from the work being too advanced for students, and they could not confront peers about their role in the group on their own and instead shied away from conflict.

According to Lopes et al. (2004), "emotional competencies are thought to be important for social interaction because emotions serve communicative and social functions" (p. 2018), which was how I came to consider the formerly elusive element now identified as ability emotional intelligence as playing a central role in this challenging task, and perhaps offering itself as a binding agent for cohesive and productive teamwork. In the literature ability EI levels have been linked to social interaction skills (Lopes, Brackett, Nezlek, Schütz, Sellin, & Salovey, 2004) with the higher the ability EI scores, the more positively associated that individual is with social interaction skills. As teamwork is founded on social interaction and because students are performing poorly on this task, an intervention was designed to improve the ability EI related skills of my students. Ability emotional intelligence is framed by Salovey and Mayer's (1990) Four-Branch Model, and since the ability of this type of intelligence has not been proven to be malleable in academic literature, this study instead focused on the

development of skills related to each of the four branches: (a) perceiving emotions; (b) using emotions to facilitate thought; (c) understanding emotions; (d) managing emotions.

Weissberg & Cascarino (2013) argue that it should be the school's responsibility to enhance students' inter- and intrapersonal skills. Additionally, previous experiences in teaching students using the Project-Based Learning pedagogy has revealed obstacles that arise during social interactions in groupwork, preventing effective use of the PBL framework and which created negative experiences and attitudes toward group work. Therefore, this intervention sought to enhance skills related to social interaction to differentiate the experience of teamwork as compared to group work, and did so by developing skills related to the Four-Branch Model. To develop skills related to the four branches of ability EI, various intervention strategies were undertaken on a daily basis over the course of a 7-week innovation. Overall, the intervention occurred in several phases. Table 2 shows the timeline of the phases conducted, and the components will be discussed.

Table 2. *Intervention timeline.*

Phase	Activity	Date/time
1	• Consent/assent forms distributed and collected • Baseline testing (MSCEIT-Youth Version) • Initial journal entry • Direction instruction: emotion theory	Week 1 Week of: September 10, 2018
2	• Four class periods of skill development; one, 60-minute period per branch	Week 2 Week of: September 17, 2018
3	• Students paired in teams based on ability scores (low/medium/high) • Project cycle and teams assigned • Students practice skills learned in previous phase during project • Field notes are taken	Week 3-6 Weeks of: September 24, 2018 October 8, 2018 October 15, 2018 October 22, 2018
4	• Students complete structured journal entries twice a week during the project cycle, total of 9 entries, including the initial entry in phase 1	Weeks 3-6 Weeks of: September 24, 2018 October 8, 2018 October 15, 2018 October 22, 2018
5	• Conclusion of innovation; post-intervention SREIS-adapted survey • Interviews with sample, 11 students • Collection of journal entries • Retrospective pre-survey (SREIS-adapted) given 2 weeks after post intervention-survey	Week 7-9 Week of: October 29, 2018 November 5, 2018 November 12, 2018

The procedure for the current study occurred in five phases. The first phase occurred at the beginning of the 2018/2019 school year when I presented the intervention to students and recruited participants from my first period class. Participation was an option for all 36 students in my first period class, and parent consent forms were sent home. Students were required to provide parent consent and student assent forms to be eligible for participation. All students participated in the intervention as these were a part of classroom lesson plans, with those providing consent and assent forms eligible for data collection purposes. The first phase included baseline testing, when students took the MSCEIT-Youth Version, designed for the assessment of pre-adolescents and adolescents (10-18 years old) and their abilities to "reason using feelings, and the capacity to enhance thought with feelings" (https://psycentre.apps01.yorku.ca/wp/mayer-salovey-caruso-emotional-intelligence-test-youth-research-version-msceit-yrv/). Further, the youth research version focuses on task performance and emotional problem solving. Students did not receive their ability EI score following the administration of the MSCEIT-YRV.

During this phase data was collected and analyzed, which informed the purposeful sampling for the intervention. The first phase continued with the direct teaching of the concept of ability EI, including introduction to emotion theory and discussions surrounding the importance of emotion in thinking and as a behavior guide. This phase took one week with 4 class sessions totaling 5 hours to complete, and only included one journal entry as the remaining 8 entries were part of practicing emotional management during the project cycle.

The second phase included engagement and participation of all students in a number of daily exercises to develop skills of each branch of the Four-Branch Model. Because the branches are hierarchical yet also occur simultaneously when practiced, initial intervention strategies built on one another and were taught, targeted and retargeted over the course of one week of 4 class sessions, totaling 5 hours of instruction. Additionally, the intervention strategies were informed and organized by purposeful sampling as students were paired for these activities based on their MSCEIT-Youth Version scores, per Vygotsky's theory of the Zone of Proximal Development pairing lower performing individuals with higher performing individuals in an effort to increase the abilities of the lower performing individuals.

In the third phase students practiced these skills as they worked in teams on a PBL project wherein students had to develop a solution to a societal issue that involved emotional content. The project was based on the 13 California propositions that were included on the November 2018 mid-term ballot, where students chose a proposition, asserted their position on the proposition, and had to create a commercial to persuade a targeted audience to vote for their position on the proposition. The fourth phase was woven throughout the structure of the intervention as on-going, which included student reflection throughout the course of the intervention on their experience with their teammates in their journal entries, and field note observations recorded as students worked together practicing their skills during the project cycle. The fifth and final phase was the conclusion to the intervention, where students took a post-intervention and

retrospective pre-intervention survey for the SREIS adapted survey and were also required to submit their journal entries.

Intervention Strategies to Develop EI-Related Skills

During the first and second phases of the intervention, students received direct instruction regarding ability emotional intelligence as well as participated in a skills-based workshop targeting the areas that comprise the Four-Branch Model. One week in class, or four, 60-90-minute class periods, were dedicated to the skills workshop where students learned about emotional theory and practiced related skills, as discussed below. The first two weeks were used to create the foundational background knowledge of ability EI, why EI is important, and learn skills related to the EI abilities that were practiced and honed. The week following the skills-based workshop students were given a project to complete as a team and were expected to practice the skills learned during the workshop as they interacted as a team. I checked in with student teams throughout the project cycle as I documented observations of occurrences where the skills we practiced were utilized.

Branch 1: Identify Emotions

The baseline branch of ability EI focuses on the ability of one to identify emotions in oneself and others to essentially read people and read situations accurately. According Caruso & Salovey (2004), "without solid and accurate emotional information, the rest of your decision making and thinking with and about emotions is faulty" (p. 83). Therefore, the initial strategy to begin to build this skill involved activities that encouraged students to recognize the emotions they were experiencing, followed by building skills to

recognize the emotions of others. The following set of activities, borrowed from Caruso & Salovey's (2004) book *The Emotionally Intelligent Manager*, focused on developing these skills.

- Quiz: Becoming aware of your own feelings
    - This quiz was a quick introduction to identifying how one is feeling to indicate how emotionally aware one is
- Mood Scale
    - The mood scale was an assignment done in the form of a journal that students were required to complete over a 48-hour period during this phase. Students tracked their emotions, which encouraged them to be aware of how they were feeling and what they were experiencing. Emotional patterns were discussed with a partner following the closure of this assignment. The journal was set up in the following format:
        - Date:
        - Time:
        - Place:
        - People involved:
        - Event:
        - Event before emotion:
        - Emotions felt:

- Emotion Scenario Cards
    - To practice emotional expressions, students received a deck of cards with an emotional scenario on it. In small groups, students practiced acting out the emotional response in a nonverbal way. Observers guessed what emotion was being expressed, and the group discussed what the key emotions were and rated their accuracy.
- Emotion Checklist
    - Before beginning this activity, students were shown images of universally accepted facial expressions to indicate basic emotional categories. Then, to practice identifying emotions in others, students were shown clips from movies where at least two characters were in a conversation, played on silent. Students filled out an Emotion Checklist based on their perceptions of the emotions experienced by the characters, and a whole class discussion followed.
- People-Watching
    - A final tool to practice recognizing what emotions others were experiencing was a people-watching activity. With a partner or in a small group, students watched clips from movies of interactions between characters and individually filled out the people-watching

rating form. Once completed, these forms were shared and discussed.

Branch 2: Using Emotions Research has demonstrated links between emotions and thinking and being aware of how one is thinking and what one is feeling can be an important way to improve thinking. In fact, two pillars of ability emotional intelligence theory are that (a) "emotions influence thought"; and (b) "thinking cannot and does not occur without emotion" (Caruso & Salovey, 2004, p. 100). For instance, the emotion of happiness can open one up to a creative space in their thinking, enabling the creation of vision and the environment in which one can dream of new ways to achieve this vision. On the other hand, the sensation of fear can literally bring us to a halt, as our ability to think clearly when we experience fear disintegrates and thoughts become paralyzed. Anger can be an emotion that both detracts and adds to our thinking, depending on the way in which we can manage this emotion: anger can encourage focus of thought and "give us energy and the focus we sometimes need to right a wrong" (p. 103) yet anger can also detract from thought and enable irrational decisions if not managed correctly.

Each emotion influences our thinking and decision making, and when we collaborate with others it is useful to understand the effects our emotions have on our thinking in these interactions. The significance of the second branch of ability EI is to "match the thinking style to the emotion" (p. 105) in order to best align emotion and thinking. Yet, being in control of our emotions in order to mood-switch to match our mood to the situation is an advanced ability. Therefore, the following exercises were conducted to practice skills related to this ability.

- Getting in the Right Mood
    - Students engaged in an activity that involved practicing method acting, as developed by Constantin Stanislavsky (p. 107). Students followed the method, including: relax to focus attention; enhance the powers of imagination; recall memories of emotions experienced in the past; etc. Following this exercise, results were discussed in small groups.
- Emotional Imagination
    - Students were shown emotion maps of the body, where emotions are felt. Discussion around what each emotion feels like occurred.
- Quick Fix: Mood Change
    - Students were shown a series of statements that could be repeated to instantly change their mood. Students devised additional statements that they could use in times where they recognized the need to 'switch' to a more positive mood.
- Snap Out of It
    - Students created a personal story of hope in order to aide them in times of sadness, desperation, or frustration. The story was created and used as a reference when experiencing these emotions during social interactions to quickly get out of the previous mood.

Branch 3: Understanding Emotions To understand emotions is to have developed an emotional vocabulary to describe emotions, as well as determining how

emotions blend, change, and transition, which also means understanding root causes of emotions and predicting emotional futures (p. 115). To develop skills related to this branch, the following activities were engaged.

- Emotional Vocabulary
    - Two charts were used and set on display during the intervention, and referred to specifically when building the skills related to this branch. The first was a chart that students could plot their emotions on that included the pleasantness of the emotion as well as the energy being felt to practice describing feelings. Secondly, a vocabulary flower diagram was displayed, with an assortment of vocabulary terms that extended on the basic emotions (ex. Fear, anger, happiness). Students were expected to learn a new set of vocabulary terms and were required to choose 10 new terms they learned and write a paragraph explaining why these terms were chosen for them.
- Causes of Emotions
    - A chart of basic emotions and their causes was reviewed so students could learn that emotions may be used to "warn us of possible danger or of good things to come" (p. 117). A supplemental chart of social emotion causes was added to the discussion.

- Make it Personal
    - Students were challenged to recall events that caused them to feel each of the basic emotions and filled out a template indicating the causes of these emotions. Tracing past emotional experiences reinforced the understanding of the causes of these emotions.
- Emotional Progression
    - Emotions have transitions, and with this activity students practiced the progression of various emotions. With a set of emotion cards, ex. “joy”, students re-ordered the list of emotional vocabulary, so they made sense emotionally.

Branch 4: Managing Emotions The fourth and final branch of the Four-Branch Model centers on the ability to take comprehensive information from the first three branches and utilize these skills to actively manage emotions for the purpose of achieving specific goals. As Caruso & Salovey (2004) noted, “the emotions we feel signal us that a real issue or problem exists…emotions direct our attention to what is important, (and) emotions contain data” (p. 134). The final strategy taught was aimed at emotional management basics, which enabled students to not only identify, use, and understand emotion they and others are experiencing, but to also actively manage these emotions during a PBL project while working in a team. Research by James Pennebaker (Caruso & Salovey, 2004) demonstrates a connection between people who express their emotions through writing and the ability to lower blood pressure and heart rate (p. 136). As such, emotional writing was a large component not only of the skill development of branch 4,

but also for data collection purposes. The following strategies were used to develop the 'manage emotions' branch of the Four-Branch Model.

- Emotional Journaling
    - Students engaged in emotional journaling twice a week starting in the second phase of the intervention. Students followed a set of directions, including: write for at least 20 minutes; write without stopping; don't edit as you write; include positive emotion words and causal/insightful phrases
- Stay Open to Emotions
    - Students engaged in this activity to practice systematic desensitization by completing a 7-step process to stay open to emotions and enable the management of emotion through conscious acknowledgement of troublesome emotions they were experienced.
- Emotion Generalization Strategy
    - Students engaged in an activity where they answered a series of questions about emotions they experienced and perhaps filtered out or overgeneralized. Students answered questions 1-10 and answers were discussed in small groups.
- Managing Anger
    - This strategy was the ultimate practice activity, as it referred back to the initial three branches in conjunction with managing

emotions. Students reviewed the emotion of anger and reactions to it and were put in small groups and given a scenario to act out. A team leader reviewed the scenario and were sure each team member went through each of the four branches when discussing how they would diffuse this situation to overcome the emotion of anger. Team leader also gave alternative examples of how the situation could be handled. The team leader went through multiple scenarios, so students could practice going through the 4 Branch model. Scenarios included: disengaging from anger; when to get angry; managing anger.

Research Design

The current study followed a convergent parallel mixed methods design (Plano Clark & Creswell, 2015). Under this design qualitative and quantitative data were collected simultaneously and analyzed separately, comparing the sets of data separately before articulating an overarching interpretation demonstrating the "extent to which the separate results confirm and/or complement each other" (p. 392). Quantitative data was captured in the first and final stages of the study, with the use of the MSCEIT-YRV (Mayer-Salovey-Caruso Emotional Intelligence Test-Youth Research Version, please see Appendix C) which established a baseline of ability EI measurement among the participants, despite not being used in the results analysis. Scores from the MSCEIT-YRV were examined and used to inform purposeful sampling as well as provided for

strategic grouping for intervention activities when students engaged in practicing the EI related skills and for teams during the project cycle. Following the conclusion of the project cycle in the fifth phase, I immediately conducted a post-intervention survey using the adapted SREIS (Self-Rated Emotional Intelligence Scale) survey to determine if the development of ability EI related skills impacted the way in which participants viewed themselves in the context of teamwork and in terms of their ability EI related skills (Please see Appendix A.) To reduce response-shift bias (Goedhart & Hoogstraten, 1992), two weeks following the first administration of the SREIS post-intervention survey, a retrospective pre-intervention survey was given. Table 1 above shows a timeline of data collection.

The response shift bias is defined as "the phenomenon whereby if participants are asked to rate their abilities before and after training, the 'baseline' they use to judge themselves will have shifts (in light of what they have learnt during training) and accordingly, a straight comparison of 'before' and after' judgements is likely to be inaccurate" (Stuart-Hamilton, 2007, p. 227). Therefore, to reduce this phenomenon and produce accurate results the retrospective pre-intervention survey required student participants to rate their perceptions as they remember themselves being before the intervention (See Appendix B). While the survey was administered twice with the same group of 34 participants, 6 student participants (17%) only took one administration of the survey and reduced the overall number of surveys available for data analysis to n = 28. The inclusion of all 34 student participants for both rounds of survey administration was strained due to habitual absences of 6 students.

Qualitative data were collected throughout each phase of the study included the use of reflective journal prompts, interviews, and observational field notes. Experiences from students and myself were documented during an intervention that disrupted the traditional group work processes in my US Government course. For instance, during the seven-week intervention students were required to keep an on-going online journal using Google Classroom about their experiences with the ability EI development process and their experiences with their teammates twice a week for 20 minutes. Journal templates and prompts were dynamically provided. These journal entries were collected for analysis. As described above, students received a total of seven weeks of ability EI-skill development training in addition to their coursework, which included direct instruction about EI theory; activities to learn the four branches of the Four-Branch Model; and a project cycle in which these skills were directly applied and practiced.

Data Collection and Analysis

Quantitative Data Collection

The quantitative data collection was twofold, although it is of note only one of the quantitative tools was used for the results section directly; this tool was a compilation of 10 questions borrowed from the SREIS (Self-Rated Emotional Intelligence Scale) with another 10 original questions I created, resulting in an SREIS-adapted survey. (Please see Appendices A and B.) The intention of this survey was to capture the students' perceptions of themselves with regard to three subconstructs: self-perception of working with others; self-perception of their ability EI related skills; self-perceptions of characteristics that a team should possess. The second instrument used for baseline data

and sampling purposes was the MSCEIT-Youth Research Version (Mayer-Salovey-Caruso Emotional Intelligence Test). (See Appendix C.)

SREIS. The Self-Rated Emotional Intelligence Scale (SREIS) was created in part to "map onto the MSCEIT; it measures people's self-reported ability to perceive, use, understand, and manage emotions" (Dunn, Brackett, Ashton-James, Schneiderman & Salovey, 2007, p. 88). While ability emotional intelligence research has not definitively proven or disproven the possibility of increasing one's natural ability in this domain as a result of an intervention, the present study used the SREIS to determine if the perception of an individual with regard to related EI skills could be improved, or affected in general, through a targeted intervention to develop said skills. The original SREIS is a 19-item composite scale with similarities to factors measured on the MSCEIT and has an overall reliability of $\alpha = .84$ demonstrating acceptable reliability, with each subscale demonstrating acceptable reliability as well ($\alpha > .70$). According to Brackett, Rivers, Shiffman, Lerner & Salovey (2006), "there is converging evidence that the four basic dimensions of EI can be detected with both self-report and performance tests, which both load on one hierarchical factor of EI" (p. 786). I pared down the 19-item SREIS for the present study, with 10 of the 19 items borrowed and coupled with 10 original items I created to complete a comprehensive self-report survey.

I included 10 additional original items I created to round out the 10 borrowed SREIS-adapted self-report survey questions, with six Likert-scale items and four open-ended questions. In total, 20 questions were used on the survey with 10 borrowed items from the SREIS and 10 original items I created. The survey was given twice, once during

my first period class immediately following the conclusion of the intervention and the second, retrospective pre-intervention survey was given in my first period class exactly two weeks following the first administration. Students were instructed to fill out the post-intervention survey regarding their perceptions of working with others as they felt in that moment, as a result of their experience in the intervention with their team. The second rendition of the survey given two weeks after the first survey had nearly the same language but included instructions to imagine their previous attitudes before the intervention experience. Data was collected using this survey to measure any change in perception. Validity and reliability of these original items was unknown at this time.

MSCEIT The Mayer-Salovey-Caruso Emotional Intelligence Test (MSCEIT) assessment is "an ability-based measure of emotional intelligence" (Mayer and Salovey, 1997, p.3). The MSCEIT-YRV was used in this study for the purpose of establishing a baseline of emotional intelligence ability levels among the sample population, with scores taken into consideration for strategically pairing lower and higher scoring students together when purposefully grouping students in teams. It would be apropos to note that the MSCEIT, like most tests of intelligence in academic discussions, is not without its limitations. The MSCEIT has been analyzed objectively in many academic papers and of note is the importance of cultural and human concerns. According to Palmer, Gignac, Manocha, & Stough (2005), the MSCEIT's limitations include a need for "an investigation of cross-cultural similarities and differences in EI" (p. 438) and acknowledgement that the EI scores of students as indicated by the MSCEIT report could have been affected by time of day, day of the week, focus of student during the test

period, etc. Therefore, I acknowledge the dynamic and multifaceted nature of the high school seniors and any adolescent taking a test of intelligence in terms of character, focus, attention, cultural and language differences, and the labels "low, medium, and high EI" as used throughout the present study are in no way permanently binding these students to these identities. This information was used to inform pairing strategies during the intervention and in an effort to understand if and how perspectives of students may vary depending on their EI score ranges; and that these scores are not necessarily stable over the course of a lifetime or representative of student characteristics and/or identities.

In contrast to the SREIS, the MSCEIT-YRV is not a self-report item but instead is a test with answers that are more correct and answers that are more incorrect. The correctness of an answer was established by expert consensus stemming from ratings of 21 international emotional intelligence expert researchers, in a similar fashion to the correctness of intelligence tests such as the Wechsler IQ scale (Karim & Weisz, 2010). The MSCEIT-YRV produces an overall ability EI score, as well as scores specific to each branch of the Four-Branch Model (perceiving, using, understanding, and managing emotions) and 8 task-related scores, as noted earlier in Figure 2. The MSCEIT-YRV consists of 141-items designed to score results based on ability in solving emotional problems and can be completed in 30-45 minutes. The scores from the MSCEIT-YRV are standardized similarly to other intelligence tests, with the average score as 100 and a standard deviation of 15 (SD=15).

The MSCEIT has an overall reliability score with an alpha of .90, demonstrating high reliability (See Table 2.) However, each of the four branch scores are less reliable

with moderate reliability alphas between .73-.87 (Vitello-Cicciu, 2001). When branches 1 and 2 are combined to determine experiential scores, the reliability goes up to .89, and likewise when branches 3 and 4 are combined to compute the strategic EI score reliability reaches .84. Table 2 below demonstrates the reliability by area score, ability/branch score, and task scores. The present study sought to use the overall ability EI score to determine high scoring, moderate scoring, and low scoring students in order to pair students according to baseline ability.

Validity, whether or not the test is measuring what it purports to measure, is good for the MSCEIT. Analysis on the four factors set forth to be measured by the MSCEIT via the Four-Branch Model corroborates the connection between each of the four branches, as "the 1997 theory sees the four factors as interrelated" (Vitello-Cicciu, 2001, p. 67). Additionally, previous research on the validity of the MSCEIT has demonstrated the abilities have low correlation to similar psychological personality and intelligence tests and therefore the MSCEIT tests the ability EI theory as it has been put forth by Mayer, Salovey, & Caruso, further differentiating the MSCEIT from other EI tests such as the Bar-On.

Table 3. *MSCEIT Reliability (Vitello-Cicciu, 2001)*

Scale Group	Scale	Coefficient Alpha Reliability (α)	n
Overall Score	Overall EIQ	.90	945
Area Scores	Experiential	.89	1181
	Strategic	.84	1275
Branch Scores	1. Perception	.87	1211
	2. Facilitation	.76	1500
	3. Understanding	.73	1561
	4. Management	.82	1334
Branch 1	A. Faces	.82	1392
	E. Pictures	.85	1297
Branch 2	B. Synesthesia	.62	1545
	F. Facilitation	.67	1670
Branch 3	C. Changes	.65	1662
	G. Blends	.52	1673
Branch 4	D. Emotional Mgt.	.78	1426
	H. Social Mgt.	.64	1463

Quantitative Data Analysis

Quantitative analysis was twofold. First, the baseline measure of individual student ability EI was analyzed with test results provided by Multi-Health Systems, Inc. following the administration of the MSCEIT-YRV. Results were provided for individual student scores across each of the four branches as well as a holistic score providing an overall EI score. The overall scores fall along a continuum of EI ability, with 100 providing the absolute middle. One standard deviation (SD=15) above the mean resulted in students being categorized as "high EI"; one standard deviation below the mean resulted in students being categorized as "low-EI." Analysis of all 34 participants resulted in categorizing students based on scores into three areas: low EI; medium EI; and high EI (recall the disclaimer regarding these labels provided above). This information was used to inform purposeful sampling and pairing of students throughout the intervention. Second, the 20 question SREIS adapted survey was administered twice using pen and

paper surveys. Students responded to this survey twice; for post-intervention results immediately following the end of the project cycle, and once exactly two weeks following the post-intervention survey as a retrospective pre-intervention survey to reduce response-shift bias, as previously discussed.

All results were manually entered into SPSS for analysis. For the quantitative data, reliability analysis was conducted for the constructs on the SREIS adapted survey during the initial phase of data analysis. Subsequently, a repeated measure analysis of variance (ANOVA) was used to determine whether there were differences between the retrospective pre- and post- intervention SREIS-adapted scores.

Qualitative Data Collection

Qualitative research served a complementary purpose for the present study. While the data collected from the quantitative instruments provided a thorough baseline measure of starting abilities and concluding perceptions, qualitative means enhanced the numerical data through rich qualitative data. Qualitative research is unique in two ways: (a) "the researcher is the means through which the study is conducted and (b) the purpose is to learn about some facet of the social world" (Rossman & Rallis, 2017, p. 4). I utilized the qualitative research approach in combination with quantitative measures for the present study in an attempt to inform action and enrich decision making in educational contexts as a result of the study. The constructivist epistemology dictates the individual's construction of reality directly influences their perceptions; therefore, it was necessary to learn from the students about their perceptions during the course of the intervention. This was done through various qualitative data collection tools, as discussed in the following

section. The current study used three types of data collection methods to explore the constructed perspectives of participants in teamwork: journal responses, interviews, and observational field notes.

Qualitative data collection included 9 reflective journal responses with structured journal prompts and writing time; 6, 1-hour field note observations; 11 semi-structured interviews following the intervention. Journal responses were assigned to all 34 student participants and were recorded using Google Classroom, beginning the day immediately prior to the start of the intervention, with the final journal response assigned the day immediately following the conclusion of the intervention. The structure of the journal response remained the same throughout the intervention (See Appendix E), yet the prompt itself was adapted throughout the course of the project cycle in order to focus student writing on reflective practices. Observational field notes were taken during the 7-week span of the intervention, with 6, 1-hour class periods used specifically for observational purposes while teams worked to complete their project. All student teams were observed for the field notes (Please see Appendix F), with the exception of two, 1-hour class periods during the third and fifth observations where the teams with sub-sample participants were of particular focus. Semi-structured interviews with 11 of the focal students were conducted the week following the conclusion of the intervention. Further descriptions of each data collection tool are described in the following section.

Journal Responses. The first qualitative instrument was the journal students kept over the course of the intervention, which was used simultaneously as an intervention tool for students to develop skills related to the fourth branch of ability EI (emotional

management) and a qualitative data collection tool collected and analyzed at the end of the intervention. Students wrote one initial prompt in the first phase of the intervention to create a baseline of their perceptions of teamwork, and the impact of emotion on teamwork processes. The remaining eight journal entries occurred twice a week during the remaining period of the intervention after all four branches of ability EI were taught. Journal entries were written and recorded through Google Classroom and were confidential. Students had 20-minute periods along with specific journal templates to complete for journal entries. For analysis, all journal entries from the 11 focal participants (high, medium, and low scoring MSCEIT students) were used for a total of 9 journal entries per sample participant. The journals were due at the end of each 20-minute writing period, and were analyzed at the end of the intervention, with the purpose of capturing the student's lived experience throughout the intervention and used to determine if tacit patterns emerged to indicate the success, neutrality, or failure of the intervention to increase self-perception of EI skills and influence students' perceptions of working with others through collaborative teamwork.

Interviews. In order to "elicit the participant's worldview" the interview guide approach was used (Rossman & Rallis, 2017, p. 155). The interview guide approach used pre-determined categories while also enabling new topics to arise based on the participant's responses. (Please see Appendix D.) I conducted individual interviews for 11 focal students from the sample using a set of five categories with sub questions and these interviews took place at the end of the intervention. In these interviews I attempted to learn more about how students' perceptions of themselves as members of teams has

changed over the course of the intervention, and to what extent each strategy used to develop ability EI was perceived as successful by the student. The interviews were also used to determine if students felt they had been impacted by the intervention itself, and whether or not their perceptions of working with others had changed as a result of the intervention. The purpose of the interviews was to determine if alignment existed between the retrospective pre- and posttest self-reported survey results with how they perceived their experiences, and to what extent they felt the innovation improved their skills related to ability EI as well as how the innovation impacted their social interactions during teamwork.

Observational Field Notes. Observations are a significant aspect of qualitative studies as qualitative studies are centered around the social nature of a particular situation or context. Observing "takes you inside the setting, and it helps you discover complexity in social settings by being there" (Rossman & Rallis, 2017, p. 170). Therefore, the final qualitative instrument was observations in the form of field notes, using a semi-structured protocol to indicate when certain ability EI related skills were being applied and practiced, supported by free hand notes. (Please see Appendix F.) As seen on the field notes protocol form in Appendix F, I was looking for skills that were taught and practiced during the emotional intelligence ability workshop with room to expand on what is occurring, in relation to which branch of EI, and the frequency of occurrences. For example, if I heard students disagree during their work together but work through their disagreement using phrases such as, "It seems as if you would prefer X, and that may work, but let's also consider Y…", this interaction would be related to branch 1,

perceiving emotions in others. The second half of the protocol form allowed for free hand notes to support what was being observed, whether this was an image, quotations from a conversation, or further examples of the practiced skills. The field notes were taken in one-hour blocks on six different occasions throughout the project cycle and the field notes focused on each team in general. Two teams that were comprised of the 11 focal students whose journals and interviews were analyzed were in focus during the one-hour observations, with each of the two teams being observed specifically at least two times.

Field notes followed a two-pronged method: (a) descriptions of what I was observing; and (b) running comments on what I was observing. The use of qualitative observation in this context enabled me to provide supporting evidence for the development of ability EI related skills and their application during a PBL project and the subtle interactions between students as they worked in teams, as I was able to provide thick descriptions of what was occurring; I recorded manifestations of tacit patterns; and I observed patterns that may otherwise be unnoticeable (Rossman & Rallis, 2017).

Qualitative Data Analysis

Journal prompts and entries were written and recorded virtually on Google Classroom over the course of the intervention's five-week project cycle, with the prompts changing dynamically as various points in the project called for a different reflective focus for students. The semi-structured interviews were recorded on an iMac laptop recording device and a semi-structured question guide. (Please see Appendix D.) On average, interviews with focal students lasted 30 minutes. The transcriptions were produced by transcription service Rev.com and confirmed by listening to multiple

playbacks of the interview recordings simultaneously with the transcriptions. The transcribed interviews used identification labels to be used throughout data collection (first three letters of mother's name and last four digits of phone number) to differentiate responses and to protect student confidentiality.

In addition to the coding process for journal responses and interviews, the first half of the field note protocol was counted and analyzed based on number of occurrences of observing each of the skills related to the Four-Branch Model as they appeared tangibly, as some skills were mental processes, which lead to the interpretation of a larger theme based on frequency of an action or behavior. Following each of the six observations was the transcription of the second half of the field note protocol. The immediacy of the transcription was due to the lack of complete sentences and the nature of short hand notes in order to most accurately transcribe what was observed. During this phase of analysis, commentary was added to the transcriptions as evidenced by thick descriptions that captured "details, emotions, and textures of social relationships" (Rossman & Rallis, 2017, p. 172).

At the conclusion of the present study, three qualitative data sources (6, 1-hour observational field notes, 99 student journals, and 11 semi-structured interview transcriptions) were printed out and coded by hand, using highlighters, pens, and legal pads for memos. Following the first round of inductive coding came the emergence of various themes and the planting of seeds that eventually grew into assertions. Following the manual coding of the three qualitative-sourced documents, each document was uploaded to the MAXQDA qualitative analysis software for further organizational and

analytic purposes. With the hard set of coding notes came the transference to the electronic version on MAXQDA, and codes were created and collapsed as each of the qualitative sources was read through a second and third time.

The coding for qualitative data utilized the constant comparative method (Charmaz, 2014) with themes emerging from the data to create a grounded interpretation of responses to the research questions. The coding process began with transcription of interviews, printed out and hand coded for the first three rounds of coding. The journals of the focal participants were also printed and hand coded, as were the observational field notes. The interview transcripts and journals were organized by student EI level and coded in chunks, going in order from low – medium – high-EI. The first three rounds of hand coding focused on open coding of the three qualitative data sources one at a time, beginning with interviews and ending with observational field notes, complete with categories and evidence labeling. With each iteration of hand coding came new or revised categories based on additional insights and pieces of evidence that were gained with each analysis of each qualitative source. At the conclusion of the third round of hand coding for each source, pre-assertions were drawn, organized and labeled under emergent umbrella themes.

Upon completion of the initial three rounds of hand coding and development of initial themes, I took a meta analytical approach and compared the qualitative sources against one another to determine if there were similarities and support tying together the pre-assertions I had developed for each theme. This process was axial coding, where codes were connected and categorized based on the emergence of patterns across data

sources. A number of assertions were confirmed across the three sources of qualitative data with supporting evidence while other assertions were revised or collapsed for efficiency and effectiveness. Additionally, within each theme emerged sub-assertions that were developed from the supporting evidence. The coding process was dynamic and interactive, with continuous analysis of themes, assertions and sub-assertions.

The final procedure of the coding process was the alignment of themes to each of the research question and the development of assertions and sub-assertions. Following the development of thematic assertions and sub-assertions, member checks were conducted with 7 out of the 11 focal students to ensure the assertions were supported by their experiences. The member-check was conducted to ensure participants felt as if the emergent themes corresponded with their experiences in teamwork, and their experiences during the intervention that influenced their perceived ability EI related skills. Qualitative data analysis provided supporting evidence and a basis for assertions for each research question.

Table 4 demonstrates the links between the research questions and the activities and data collection for the innovation.

Table 4. *Research Questions and Data Collection.*

Research Question	Intervention Action
What were US Government students' perceptions of teamwork and their role in it during the course of a seven-week intervention?	➢ Journals ➢ Interviews ➢ Field Notes
How did students' perceptions differ by EI level?	➢ Journals ➢ Interviews
How did pairing low- and high-ability EI students influence their perceptions of their role in teamwork?	➢ Journals ➢ SREIS adapted retrospective pre- and post-intervention survey ➢ Field notes
How and to what extent were students' ability EI related skills and perceptions of working in teams developed over the course of the intervention?	➢ SREIS adapted retrospective pre- and post-intervention survey ➢ Interviews ➢ Field notes ➢ Journals

Validation and Trustworthiness

The use of a mixed methods action research study provided ample opportunities for validation and trustworthiness of the results. The present study used a combined mixed method data analysis approach wherein the qualitative and quantitative data were analyzed separately and compared to determine whether "the results…converge or diverge when addressing the posed research question" (Ivankova, 2015, p. 246). The convergent parallel design was employed in order to determine if any trends existed dive

in the quantitative data, as well as to further explore the differences between retrospective pre and post quantitative data through a richer contextual lens. Qualitative data was analyzed to articulate unique perspectives from focal students as well as myself as the researcher.

Comparing the results from the quantitative and qualitative strands improved the credibility of the present study's conclusions and "to achieve valid meta-inferences to inform the action/intervention or its evaluation" (p. 246). The use of multiple sources of data collection and analysis also demonstrated appropriate triangulation and further enhanced the credibility of the present study. In addition to triangulation of the data from multiple data tools, member-checking was utilized at the end of the intervention to ensure the interpretation of data was aligned to student experiences.

Action Plan

Table 5 captures the procedures of the current study, beginning with the initial preparation of materials through the conclusion of the study.

Table 5. *Timeline and Procedures of the Study.*

Time frame	Action Steps	Procedures
Early September	• Prepare participant materials • Identify and invite students • IRB consent forms	• Prepare, distribute, and collect consent and assent forms
September	• Implement initial baseline pre-tests • Initiate phase 1 and 2 of 7-week innovation	• Facilitate test taking for the MSCEIT • Facilitate survey • Initial journal entry • Direct teaching of EI theory • Week-long workshop focused on building 4 Branches, in hierarchical order
September-October	• Initiate phases 3 and 4 • Phase 5 (ongoing)	• Assign teams, assign roles • Project is assigned and executed • Begin journaling activity • Observation field notes
November	• Finalize project cycle and collect post-test data	• Journals will be submitted • Posttest survey • Conduct 8-10 individual interviews
December	• Data analysis	• Collect and begin analyzing quantitative data • Collect and begin analyzing qualitative data • Code journals, code interviews

CHAPTER 4

DATA ANALYSIS AND RESULTS

The road to understanding the results of the present study has been paved by quantitative and qualitative data collection and analyses. These results are presented in two sections with the intention of demonstrating the convergence and complementary nature of the present mixed method study. The first section is comprised of quantitative data analysis, providing a concise yet effective demonstration of the statistical results and laying the foundational framework for deeper comprehension of the second section, featuring qualitative results. Prior to the presentation of results is a brief review of quantitative and qualitative instruments and procedures for meaningful understanding of the subsequent results sections.

While the quantitative data was specifically used to answer "to what extent" the variables were developed in the third research question, the statistical results provided by the quantitative analysis lend support to the rich and thorough qualitative analysis and concluding assertions. The research questions this study sought to answer were: (a) What were US Government students' perceptions of teamwork and their role in it during the course of a seven-week innovation? (i) How did students' perceptions differ by EI level? (b) How did pairing low- and high-ability EI students influence their perceptions of their role in teamwork? (c) How and to what extent were students' ability EI related skills and perceptions of working in teams developed over the course of the intervention?

Quantitative Results

Results from the quantitative analysis are presented in two sections. The first section discusses the reliabilities for the scores of the dependent variables: student perception of working with others in a team and student perceptions of their ability EI related skills. The subsequent section presents an analysis of variance for these variables.

Reliabilities

Reliability analyses of the dependent variables, working with others, perception of ability EI related skills, and characteristics of successful teams were conducted to begin the quantitative analyses. The reliability analyses were performed to determine whether scores for the variables were consistent. Cronbach's alpha coefficients were acquired for the retrospective pre-intervention assessments of the "working with others in a team" score and the "using ability emotional intelligence skills" score. The Cronbach's alpha coefficients for the working with others in a team and emotional intelligence related skills scores were .82 and .74, respectively. Both of these reliabilities exceed the .70 value, which is considered to be a minimally acceptable level of reliability. The third subconstruct "characteristics of a successful team" had a reliability below the acceptable threshold (<.70) and therefore was not included in data analysis. For the working with others in a team scores items 4-6, which assessed preferences for "working alone", were reverse scored prior to conducting the analysis. For the emotional intelligence scores, item 4 on the original survey was deleted to increase the reliability.

Repeated Measures Analysis of Variance (ANOVA)

A repeated measures analysis of variance (ANOVA) was conducted following the reliability analyses to measure whether the working with others in a team scores and the using emotional intelligence related skills scores differed over time, i.e., prior to and following the intervention. The overall test of these scores was significant, multivariate $F(2, 26) = 7.73$, $p < .002$, with partial $\eta^2 = .373$, which was a large within-subjects effect based on Cohen's criteria (Olejnik & Algina, 2000). Accordingly, at least one of the means differed from pre- to post-intervention assessment. The implication of this result demonstrates the effectiveness of the knowledge and practice of skills during the intervention, as there was a significant change in self-perception of working with others and ability EI related skills as a direct result of the intervention. The overall test of these scores through the multivariate test required further analysis of the variables on individual levels to determine the impact the intervention had on those variables.

Therefore, individual follow-up ANOVAs were conducted for the two dependent variables. The effect of working in a team was significant, $F(1, 27) = 12.36$, $p < .002$, with partial $\eta^2 = .314$, which was a large within-subjects effect as shown in Table 6. The significance level ($p < .002$) demonstrates the extent to which students' perceptions about working with others had changed based on the intervention, providing evidence that this dependent variable was clearly impacted by the content of the intervention. Similarly, the effect for using emotional intelligence was significant, $F(1, 27) = 9.16$, $p < .005$, with a large within-subjects effect, partial $\eta^2 = .253$, again demonstrating substantial evidence

that students' perceptions of their ability EI related skills were greatly improved as a direct result of the intervention.

The pre- and post-intervention means for the dependent variable working with others in a team, 3.47 versus 4.13, respectively, were significantly different showing an increase of 0.66 point. Additionally, the pre- and post-intervention means for 3.06 versus 3.42, respectively, for the using emotional intelligence related skills variable were significantly different showing an increase of 0.36 point (Please see Table 6 below.) The descriptive statistics in Table 6 exhibit the significant difference in the mean between the post-intervention survey and retrospective pre-intervention survey, lending credibility to the notion that the intervention directly and positively impacted student perceptions of working with others and their ability EI related skills.

Table 6. *Descriptive Statistics.*

	Mean	Std. Deviation	N
RetroPre/others	3.47	.92	28
Post/others	4.13	.70	28
RetroPre/EIskills	3.06	.71	28
Post/EIskills	3.42	.66	28

Taken together, the quantitative data indicated students' scores differed significantly from the pre- to the post-intervention assessments. Moreover, both scores increased, which indicated students' perceptions reflected that their skills grew in these areas and their perceptions of working with others in teams was significantly changed.

Qualitative Results

The quantitative results from this study demonstrated statistically significant trends in the data. In an attempt to support the significant quantitative findings, a mixed methods approach has been used to dive deeper into the understanding of these trends

through individual perspectives. It was through the use of mixed methods research in the present study that answers were simultaneously offered for both "confirmatory (verifying knowledge) and exploratory (generating knowledge) questions…(to) get answers to "what?" "how?" and "why?" (Ivankova, 2015, p. 3). Thus, it was at the intersection of the quantitative and qualitative results of this study that comprehensive meaning was made. The overarching patterns and themes that were revealed through multiple rounds of qualitative analyses are listed in Table 7. Themes that emerged during qualitative analysis centered on the desire and/or need for social connection in order for team members to participate in mutual, two-way communication in order to function properly during the intervention project cycle. It appeared that feeling connected to teammates increased the chance of in team communication to occur, further increasing connections to teammates, furthering the presence and quality of collaboration. Despite the varying reasons focal students cited as why they had negative experiences with group work in the past, each focal student concluded independently the need for social connection and communication was absolutely necessary for productive, focused, and enjoyable teamwork.

The four assertions and multiple related sub-assertions that emerged during data analysis directly or indirectly were associated with each of the research questions of the present study. The following sections are organized by each research question in an attempt to align the results of data analysis with the intention of the study. Supporting evidence and discussion of each assertion and sub-assertion follow in the subsequent section.

Table 7. *Qualitative Assertions.*

Assertions	Sub-assertions
RQ 1: What were US Government students' perceptions of teamwork and their role in it during the course of a seven-week innovation? The EI intervention enabled students to approach teamwork in a unique way. Students used the opportunity of the intervention to change their behavior in their teams, using the skills and strategies taught and practiced during the intervention.	▪ Students felt an increased sense of responsibility to their teammates. ▪ The intervention created an interesting space for students to try new roles. ▪ Students reported increased communication among teammates, as well as increased confidence in such communication. ▪ Students noticed the presence of authentic collaboration. ▪ Students' perceptions of teamwork were also influenced by the knowledge and skills learned during the 2-week EI training. ▪ Students articulated a noticeable difference between teamwork and group work.
RQ 1a: How did students' perceptions differ by EI level? Perceptions of roles on teams varied, with patterns emerging for low, medium and high EI students.	▪ Low-EI students tended to focus on self-image and how others perceived them. ▪ Medium-EI students seemed to be social chameleons who could choose to either be great contributors to the team or perhaps slack-off and slow the team down. ▪ High-EI students appeared to be the traditional leaders of a group project who would assume this role in order to ensure the project is actually done and their grades are secured.
RQ 2: How did pairing low- and high-ability EI students influence their perceptions of their role in teamwork? Low EI students appeared to become more comfortable with their peers as time went on. High EI students appeared to lead the teams in terms of functionality, ensuring the project was meeting the pre-set benchmark deadlines.	▪ High-EI students realized their traditional role as a leader was rigid and perhaps prevented quality collaboration. ▪ High-EI students also learned the importance of including all voices of their teammates in team discussions. ▪ High-EI students also recognized the importance of emotional awareness of their teammates and themselves. ▪ High-EI students pleasantly surprised by the contributions of the peers they had previously had misconceptions about. ▪ Low-EI students' perceptions of teamwork and their role in it were influenced by their High EI peers. ▪ Low-EI students' role in the team appeared to be influenced by self-conscious patterns.

RQ 3: How and to what extent were students' ability EI related skills and perceptions of working in teams developed over the course of the intervention? The perceptions of students regarding their ability EI related skills and working with others in a team were influenced by the 7-week EI intervention.	▪ Improved perceptions of EI related skills developed in the following areas: accurately identifying the emotions of self and others (Branch 1), using emotions (Branch 2), understanding emotions (Branch 3), and managing emotions (Branch 4).

Intervention-based Behavioral Modifications

The EI intervention, as well as the intentional differentiation of working in "teams" versus "groups", enabled students to approach teamwork in a unique way. In many cases, students used the opportunity of the intervention to change their behavior in their teams, using the skills and strategies taught and practiced during the intervention. Further, students articulated the noticeable differences between working together as a team during the intervention as compared to working in a group on a project in previous classes. Observational field notes taken during 6, 1-hours class periods reveal objectively witnessed behaviors that support the above assertion. Interviews and student journals revealed the inner thoughts of individual participants both throughout the intervention and at the conclusion of it.

Increased responsibility to teammates. Students felt an increased sense of responsibility to their teammates they had not experienced during group projects previously**.** It became apparent through observational field notes of both the entire class and those students involved in the sub-sample that a sense of responsibility to the team was present. In my years of using group projects as a primary pedagogical tool I had not witnessed so much involvement on the part of each team member. Although some students took a while to warm up to the conversation their team was having, it appeared as if all team members became engaged and remained consistently involved in team

conversations and activity. Further, I noticed at least two teams who had agreed to put away cell phones for the entire period in an effort to stay and remain engaged as a team. The teams noted that Chromebook laptops were available in case of the need for internet research. An observational field note from the second observation on October 15, 2018 early in the project cycle revealed the following:

- ◊ Team B has all 6 out of 6 students engaged in conversation, and were overheard agreeing to put cell phones away until needed for some specific reason (i.e. research the topic). While this seemed painful for at least two of the team members, they obliged and successfully put away their phones
- ◊ Team D began the morning quietly working, similar to how a group looks during a group project. About halfway through the period (8:34am) two students attempted to bring teammates into a conversation about their proposition and after a few minutes of conversation between just two members, the other four followed. The team's energy picked up and were going back and forth with ideas, with each teammate contributing to some extent.

These field notes are indicative of an increased presence of social responsibility. In previous project cycles, cell phones have been a staple for students. Often used for reasons other than working on the project at hand, it is almost unheard of in a high school classroom for students to not only put away their cell phones, but communicate the need to do so and have agreement from the team. This immediately demonstrated a change in behavior that was worth noting. The second note from this observation demonstrated the increased level of communication among students that could have led to the feeling of inclusion that many focal students reported during their interviews and in journals. Students from every EI level also noticed the increased sense of social responsibility to their team that they had not experienced before during previous group projects. Eight out of 11 students in the focal group expressed this sentiment in either their interview or

journal responses. One medium-EI student from the focal group, Lupe[4], demonstrated the desire to contribute to his team when he wrote in his journal:

> In some other group projects I've been in, it just feels like I have to do this and get it done by this due date like there's nothing that's gonna come out of it like it feels like I'm just doing it for my grade but in this project it feels like I'm not just doing it for my grade. I think working with my teammates also changed how I feel about group projects because in a group projects it's not just me, it's the people who are in the group with me affect how much I work and how much I want to do but with this group I actually want to help and do something. I don't have the mentality of 'I have to do this just for my grade' I have the mentality of 'I actually want to do this because it's fun and I actually want to help my group out[5].'

A student with high EI also made note of the difference in attitude toward their team with regard to social responsibility that they had not experienced before, commenting on this unique situation as part of a journal reflection. This student included how they could change their own behavior to do their part in contributing to the functionality of their team. Student Arly wrote:

> Working with my team makes me feel glad because this is the first time in a long time where I am doing a team project in which everyone is participating and doing their job. The only thing that worries me is the punctuality of some of them and even myself, so i will make sure I do my part and come on time to have everyone content and not upset.

A low-EI student echoed this feeling of social responsibility during an interview. Student Sica discussed a circumstance in which he felt the need to stop 'goofing around' and rejoin his team to focus on the project. For Sica, this was a different feeling than previously experienced and resulted in a conscious behavioral change:

> AZ[6]: Well, so if you see that one of your teammates is getting kind of frustrated

[4] Pseudonyms have been used for confidentiality
[5] Student responses have not been edited
[6] AZ refers to my first and last initials and is used throughout this chapter

that maybe you and someone else on the team is goofing around-
Sica: Uh-huh-
AZ: When you recognize that they were getting frustrated, did you think, "maybe I should come back to work?"
Sica: Yeah, you kinda think about it, like, "well, maybe I should just start working", so it's like, then I'll do it.
AZ: So their emotions, you're recognizing their emotions and then triggers a response-
Sica: Yeah, it triggers you from playing around, and you think about it, you're just like, "I'll just go to work."

Despite the seemingly positive approach students were taking to their teams, which they hadn't experienced before, occasional blips of disengagement and frustration with team members appeared, perhaps due to old habits from previous group projects. High-EI Student Eard wrote in her reflective journal about her frustrations with her teammate not appearing on the day of the final presentation:

> (Team member) never showed up and earlier on in the project she was saying things like 'I might not be there on the day we present' which was a very specific day to miss. I think all along she knew that she wouldn't be here and it's disappointing that she never showed up and didn't even communicate through the group chat.

Eard had noted throughout her reflective journals the effort she was investing into managing her emotions, and this excerpt from her journal is a possible remembrance of previous group work experiences coming to the surface. Other students felt compelled to do their part to contribute to the team through an invisible force of pressure from their teammates. According to medium-EI student Shley, "I'm pretty sure everybody feels stress about that and with the team thing it's just like you make your own due dates and if you accomplish, then you feel good. If not, you get ... Your teammates get mad at you." A low-EI student noted in his journal that he put pressure on his teammate to accomplish

his part of the project, and appeared to be enthused that it worked. Student Nica wrote: “He recorded the video with me and was even up to be in my video. I was so proud of him! This all came after people called him out on not doing anything, and then he did it to prove a point, which is pretty alright with me.” Through observational field notes, interviews and student journals, it is apparent that a sense of social responsibility encouraged students to actively participate in this project cycle more than in previous group project experiences.

Disruption to traditional patterns provided opportunity for experimentation. The novelty of the intervention created a disruption in traditional behavioral patterns for students, which led to many students to trying new roles and stepping out of their previously established social expectations. Evidence demonstrated that this disruption in approach to working with others resulted in more effort for students to participate with their teams socially and thereby created stronger social bonds with teammates.

Following the increased sense of social responsibility came the development of students intentionally trying out a new role in their team. For some, this came as an opportunity to step down as a leader and let another student take control; for others, this came as a chance to be more actively involved then they had ever been in previous group projects. In an interview, high-EI student Cart remarked, “I usually don't do this but I try to take like ... I don't know what the word. It's not really a leadership role but the mediator kind of 'cause I thought no one else is really gonna take it that seriously. So I thought I might as well try to feel it out for myself.” This student intentionally stepped down from their usual leadership role to try a new role during this project cycle, thereby

sparking a version of collaboration to which he was not accustomed. This student had consistency in his decision to try a new role when he wrote in his 6th reflective journal:

> I've definitely taken a different role in this group as opposed to in other group projects in the past. Usually, I act more as the leader or the one doing all of the work for others, but now I think I'm cooperating with my teammates much better instead of just doing all the work myself. I've also tried to spur communication more than usual, so I guess that's one thing that has been very different about this project

Another high-EI student, Arly, also noticed a difference in her role on the team as a result of higher levels of social responsibility on the part of her teammates. Whereas she had previously been a team leader, she noticed she was able to be involved without having the lion's share of the work fall on her shoulders. In her 6th reflective journal she wrote: "Working with my teammates did change the role I felt I had in the team because I don't feel like I have to carry the team I can rely on them to do their part." Low-EI student Nica also noted his attempt to try a new role in his team with strategic purpose in an effort to socially bond his team and produce collaboration. Nica consciously recognized the difference in his intentional approach with his own behavior in order to positively impact his team, writing in his 9th reflective journal:

> Instead of being really strict as to what was to happen I was more laid back. I would even crack a joke at times or act silly. My main purpose was to get my group to work together not because of forcefulness but rather because they wanted to. If they saw someone like them or even someone they thought fooled around get to getting work done then they too would follow.

The feeling of a social bond appeared to be the driving force behind this student's strategic change in behavior, coupled with the justification that if he changed his behavior to focus on the work at hand, his teammates would follow suit. Observational field notes

taken during the first and fourth observations, on October 11 and October 19, 2018 respectively, revealed similar patterns that I noticed when teams were organizing themselves to begin the project, as well as how students maintained these roles throughout the project cycle:

October 11, 2018:

- ◊ Teams have been assigned using the data from the ability EI test. One team will be the focus of today's observation: Team A. This team consists of 6 members: 2 with high EI, 2 with medium EI, and 2 with low EI.
- ◊ It is my guess that roles will be chosen according to related EI level: high EI will take the lead, low EI will remain quiet and perhaps unengaged. (8:10am)
- ◊ I am surprised by how the team has organized itself. The one of the two students I had assumed would take over as the leader, high EI and a personality that appears to be comfortable speaking in front of others and contributing ideas, is remaining relatively quiet and observant during the initial team meeting (8:29am). This student has reported themselves as the team time keeper rather than leader (students were given roles to choose from)
- ◊ In the same team I notice one of the students who I assumed would elect to take a less active role (i.e. time keeper) has chosen to be the team harmonizer (8:30am)

October 19, 2018:

- ◊ Members of Team B have surprised me in how they are organizing themselves and the roles that they are taking on as the project progresses. A medium EI student has taken the lead and seems to be comfortable running the discussions in the group and delegating work. Another student on the team with medium EI has chosen to serve as the team's harmonizer.

During these two observations I noticed an increase in participation from students who tended to be on the edge in terms of motivation; they were fully capable of contributing to their teams, yet other factors (i.e. mood, sense of inclusion) could have prevented this from occurring. In each of these observations above I was pleasantly surprised by the initiative taken among these students. For instance, as noted above, a student who traditionally played the role of a leader in previous classroom activities remained quiet

during the organization process when roles were being assigned, opting to instead take a 'back seat' role as time keeper. Another student who had yet to show much initiative in class until this point chose the role of harmonizer, surprising insofar as this role required constant attention to the team with their attention on mediation.

In addition to stepping away from previously established social expectations within groups during projects and attempting new roles, students also noticed an increase in the sense of a strong social bond with their teammates. The feeling of being socially bonded was noticed as a new experience by 8 out of 11 of the focal students, with at least one EI level represented across the 8 who mentioned it. For instance, medium-EI student Shley wrote in his 3rd reflective journal: "Today was pretty fun because, I really felt we connected more like friends instead of classmates." This feeling continued for Shley in his next journal entry, stating: "It felt like the rest of my day was going to be bad but just talking to my group was pretty calming and funny." High-EI student Arly also felt the social bond and the development of friends instead of teammates during her interview when she said, "It didn't really feel like a project to me. It was like, oh, I'm working with my friends and I had never talked to any of them before, so yeah, it created a different kind of bond." Low-EI student Sica appeared to feel more confident communicating with his team as a result of the social bond that was created. Writing in his 9th reflective journal, he stated:

> For this project it has taught me a lot like how to meet and just talk to people i don't know.Then eventually we build some type of bond like a working bond where start to remember their name or kinda know who they are.

Sica insinuated in his journal response that in previous experience of group work, he

wouldn't even bother to learn the names of his peers, which on the surface could appear to be lack of motivation or laziness. Yet during this teamwork experience, Sica's reflection indicated he became more comfortable talking to his peers whereas before perhaps he was shy or not comfortable, hence not worrying about learning their names; now, he felt bonded to his teammates and became more confident communicating with his team.

Observational field notes taken throughout the project cycle support the inferences these students were drawing based on their experiences. Two field notes in particular lend credence to the feeling of a stronger social bond. During the 4th observation on October 19, 2018 it was noted that the noise level in the room had increased, perhaps in part due to the social bonds being created; during the 6th observation on October 26, 2018 increased positive social interactions between the team members were noted.

October 19, 2018:

- ◊ We are at the end of the second week of the project. Teams have gotten louder as they work together, which is demonstrating an increase in participation among team members. The majority of time the conversations the teams are having are on topic, but occasionally the topic changes to things unrelated to the project.
- ◊ Team members who appeared to not know one another last week are now more relaxed, as is evident in their body language. Last week, a team member on team C appeared to be closed off with arms crossed, headphones in the ears, hood on, and a look of disinterest on their face. I noticed today (8:24am) that this same team member still is not verbally contributing a lot, but they do not have earphones in, arms are uncrossed and they appear to be actively listening to the team with a look of interest on their face.

October 26, 2018:

- ◊ I overhear one team as they are preparing to present. One of the teammates does not look very excited to be presenting and is in fact looking very nervous. Another teammate says "Don't worry, I know you aren't ready to speak publicly. I can take your part if you want" (8:03am). The nervous teammate is very grateful

and appears to relax as the team takes the stage.

- ◊ At the conclusion of each presentation, the teams appear to be jubilant and happy to have the presentation over. 5 out of 6 teams had teammates either giving high-fives, clapping, or giving thumbs up to one another.

The fourth observation, as cited above, made note of the increased presence of sound in the classroom. Any teacher that has attempted to use projects and group learning can attest to the deadly silence of non-existent collaboration. However, during this project cycle noise was consistently appropriate. Students were getting to know their teammates and contributing ideas and debating concepts, the essence of collaboration. The sixth observation cited above demonstrated the bond that was created throughout the team as evident through body language and words of encouragement that would be largely absent in a group project. The presence of a social bond among teams was present not only in observations, but also recorded through individual perspectives. Students from each EI level noticed this difference in their experience as compared to previous experiences, and the social environment created by stronger bonds lead to increased levels of participation through communication.

Social bonds led to increased communication in teams. The dynamic social environment enabled by the intervention permitted students to build social bonds that simultaneously created the space for easier and increased communication among teammates, as well as increased confidence in such communication. Communication levels were noted as being higher during this project cycle than previous project cycles either in my classroom or in the experiences of students in earlier classes. Students appeared to be more at ease with one another as the project cycle continued, with engagement from all members of the teams in conversation and in the making of their

public product in the form of a commercial. Observational field notes captured the presence of increased communication during the 4th observation:

October 19, 2018

- ◊ Team E has 3 students who I noticed did not seem to want to participate earlier in the year in any activity that we did in class, or participate verbally in general. I assumed these students were perhaps self-conscious based on their body language and the nervous look on their faces when they were called on in class. However, I am seeing 2 out of 3 of these students actively participate and contribute to their team. One of the two students looks relaxed and is laughing with their team, while the second student appears to be having a good time listening to the team and occasionally contributing to the conversation. The third student remains quiet, but is actively listening and will answer calmly when asked questions by the team.

The creation of a social bond as noted above appeared to have a snowball effect that was apparent in the way teams carried themselves through the project. As referenced above, during the fourth observation even students who has previously been disengaged in any class activity were now at least committing their attention to the team, and engaging with teammates through shared jokes and other social bonding methods thereby reinforcing the bond and producing a more comfortable working environment. Students also noticed the increase in communication within their teams, as well as their desire and ability to communicate more easily with their teammates as a result of feeling comfortable with their teammates. Seven out of 11 focal students noted the difference in communication levels, and confidence in communicating, as a result of their experience in the intervention project cycle. Medium-EI student Ancy reiterated this feeling in his interview, saying “Everyone's more connected and I feel everyone has more confidence to speak to one another. To bring up certain problems or ideas. As in other projects, like I said, you're technically by yourself.” Low-EI student Sica noted his confidence going

into future projects and how it was easier to communicate in this project cycle than previous experiences. During his interview, he said:

> AZ: How has your perspective about teamwork changed as a result of this project cycle? Before, for instance, before you went through the training and this project cycle, how did you feel when you had to do a group project?
> Sica: I kinda felt uncomfortable, like I didn't really wanna do one.
> AZ: Okay. And then, has this project changed that feeling?
> Sica: Yeah, it changed a lot, it will make it a lot easier for the next group, if we're supposed to have a next group project-
> AZ: Mm-hmm (affirmative)-
> Sica: Like it'd be like, okay, it's nothing new, it's easy, just to communicate

Students also noted the behavioral changes and/or surprises they had when working with their teammates. Whereas high-EI student Cart assumed his teammate would remain quiet during the project, he was surprised by this students' ability to participate. During his interview, he stated: "but for (teammate), it definitely seemed like he was more reserved and I know because I used to be that kid too. It's hard to get your ideas out when you're not talking obviously. So I think that fact that we were communicating more, that kind of helped him come out of his shell." Medium-EI student Lupe reflected in their journal about the ease of communication with their team that they were experiencing in this project cycle:

> I like my team a lot. They're easy to talk to and work with and I feel included when we're discussing things about the project like the propositions we wanna do and we all shared our ideas about the propositions we have and how we can show our proposition for the project. We communicate easily and make sure everyone is on the same page.

During an interview, high-EI student Arly noted not only the fact that communication was easier, but also addressed why easier communication was beneficial for her team and

the project in general. Arly remarked:

> I felt more confident in our group work because I don't know. Just felt like we could talk to each other and if anything was not going well or if we had a different idea…It's easier to communicate with people when you know how you're feeling and why you're feeling the way you're feeling. So, it helped during the project because we were able to tell each other, like, 'Oh. This is bothering me and it's making me feel this way. How can we fix it?'

The change in attitude toward communication seemingly had an iterative effect that carried through to perceptions of increased levels of collaboration and back again, as the more comfortable students felt communicating with one another, the more compelled they felt to continue the communication. Additionally, the student quoted above also referred to emotional awareness, another theme that carried throughout the experience during the intervention project and played a subtle role in the approach and ability of students to use this information to inform their current and future behavior.

Increased communication among teams resulted in a sense of inclusion, spurring authentic collaboration. As a result of increased sense of responsibility, increased communication and a strengthened social bond, students noticed the presence of authentic collaboration. In large part the quality of collaboration was noticeably improved compared to previous experiences due to the inclusion of all voices of the team being heard. Several students, 9 out of 11 of the focal students, noticed an increase not only in the presence of collaboration within their teams but also the quality of the collaboration as a result of the intervention. In addition to the environment being set up through the intervention as an experimental space where students felt free to choose new roles, the exposure to the theory of emotional intelligence and the practice of related skills positively impacted their perceptions of collaboration, or working with others in a

team. High-EI student Eard remarked on the difference she felt during this project cycle in terms of collaboration, during an interview:

> I felt like doing the final presentation and seeing it come together really showed how teamwork is different than just working in a group and working individually but together, it's more ... like everyone incorporated something and you went through it together. I think that helped it. It was just different.

With regard to how the EI intervention directly impacted her collaborative experience, the same student noted, "So I feel like after learning about emotional intelligence, I felt more comfortable being part of a team. And I felt like everyone really worked together. I think learning about it (EI) in class and applying it to a group, or a team project, really just helped me work better with others." Medium-EI student Shley corroborated this notion in a separate individual interview, supporting the effects of the intervention, in this case recognizing the emotions of self and others on the quality of collaboration within his team:

> AZ: Okay. Do you think that it's important to recognize what you are feeling and what others are feeling when you're working in a team?
> Shley: I'm pretty sure it was, because it really ... It makes us kind of connect and make more of the work. So, it helped us achieve-
> AZ: Connect together? Like, as people?
> Shley: Yeah. Like, it helped us achieve our goal for the video and stuff like that.

Shley reported above that the social connection he developed with his team lead to higher quality collaboration and the reaching of the pre-determined goal for the team. During the 6th session of observational field notes on October 26, 2018, I noticed the manifestation of collaboration as well through the presentations of the final products:

- ◊ Student presentations are going well, and while these aren't the best presentations I have ever seen it is clear that all members of each team contributed to the project

> and worked on their revisions to incorporate the feedback they received during the practice presentations.

The quality of the product did not deter students from actually collaborating and contributing each member's ideas to the project. The commercials (product) themselves were not spectacular, but the depth of knowledge across each team was noticeable and provided evidence that learning occurred for all teammates as a result of authentic collaboration. Journal responses also captured the essence of increased and improved collaboration among teams. In their 9th reflective journal, medium-EI student Lupe discussed their experience with increased collaboration:

> I think what felt different was that we all actually worked together to produce something instead of me just doing one part and another person doing another part and then just coming together when we had class and working on it together, but in this project we contacted each other and worked together on it outside of the classroom

As part of feeling more comfortable collaborating with their teams and thereby increasing the amount of participation on the part of team members, students noted the importance of not only letting all members have their voices heard but of having their own voice respected and listened to. Creating a sense of inclusion seemed to be used strategically by high-EI students. High-EI student Elyn wrote in her 9th journal of the importance of listening to all team members for improved collaboration:

> like others feelings are very important you can't have a good communication with someone if you don't hear them out or let them express certain ideas or opinions. In the span of these 2 weeks I learned to collaborate and trust others in getting certain things done.

Another high-EI student also noted a conscious change in her behavior in order to create an inclusive environment for her team. This high-EI student, Eard, reflected on her

changed behavior during her interview and noted how emotional awareness of others, a concept learned during the intervention, motivated her behavioral change:

> Usually, I would just not really always listen to every single person. And I think that's what makes people angry sometimes is when they're not heard. So trying it this time, I noticed a change and everyone got along…I think it's important (to be aware of your emotions) because if you're not aware of your emotions, then it's just going to be chaotic. And I think being aware of other's emotions too just helps everyone feel like they're a part of something and they're being looked at and listened to

Eard's transition from leading without hearing others to working shoulder to shoulder with her team and listening to teammates is apparent in the above referenced quote. The behavioral change was done with purpose and results from the change were positive. Eard also attributed this change in her behavior to being more aware of her own and others' emotions, demonstrating skills related to the third branch of the Four Branch Model as she forecasted that "it's just going to be chaotic" if teammates don't feel included.

Medium-EI students also noticed the difference in their experience due to the sense of inclusion of all team members. Student Lupe spoke about feeling included with his team during an interview. When discussing his experience in this project cycle as compared to previous projects, he said:

> I think, I don't know. I felt more involved instead of ... Because in other group projects that I've done, it's just been, oh, you're going to do this and this is all you have to do and then we'll come together and put it together. But with this project, we all put our ... We all gave each other ideas on what to do.

Rather than having work delegated and performed in isolation, Lupe felt a sense of collectivity and contribution. Increased communication created the foundation for a sense

of social belonging and bonding, leading to a sense of responsibility to complete the project. Students became aware of the importance of including all team members to achieve this goal, providing the fabric for cohesion among teammates.

Students' perceptions of teamwork were also influenced by the knowledge and skills learned during the 2-week EI training. Most students acknowledged the importance of emotion when working with others, whether it be their own emotions or the emotions of their teammates, placing significant value on this concept and related skills. Additionally, many students noted the importance of emotional calibration within teams; essentially, the connection between "being on the same page" and the quality of the team experience. Although the knowledge and skills learned during the 2-week EI training were woven throughout the project and have been referenced in some previous sub-assertions, this knowledge and EI related skills played a large role in the team experience for many students. Observational field notes from the project cycle reveal at least three instances of students using the knowledge and skills taught during the first portion of the intervention. The observations below demonstrate the presence of: Branch 1, identify emotions; Branch 2, using emotions; Branch 4, managing emotions.

October 15, 2018

- ◊ Team B has a member who discreetly looks at the worksheet on facial expressions I had given them last week when we were going over ability EI (Branch 1)

October 17, 2018

- ◊ Students are encouraged to consider the ability EI skills we practiced in the first two weeks before the project. One team member on team C is seen closing their eyes and heard telling a teammate, "I am going to my happy place, I will be right back" (Branch 2 & 4)

October 19, 2018

- ◊ Team A is having a disagreement over the feedback they received from their peers. One team member, who happens to be the leader of this team, is clearly getting upset as she is turning red and appears to be biting her tongue. She excuses herself for a few minutes with my permission. She returns calmed down and continues with the conversation and the conflict is resolved. (Branch 4)
- ◊ Team B's harmonizer is heard saying: 'That's good stuff for the journals. You can take it out on the journal. But for now we need to get this (part of the video recording) done.' Other students on the team seem to take this lightly and chuckle, then get back to work. The harmonizer continues to use humor as a method of diffusing tension among the teammates. (Branch 4)

In the final observational note referenced above the team harmonizer, a medium-EI student, is responsible for keeping his teammates on track and assisting in resolving issues. In this instance, he attempted to use humor to diffuse a tense situation with his teammates and manage their emotions (Branch 4). Students also made note of the use of the knowledge and skills learned during the first portion of the intervention. For at least one student, the focus on emotion in the classroom was a unique experience and although they felt strange focusing on emotional content, the student placed value on this focus through reflection. During their interview, medium-EI student Lupe noted:

> When you gave us those sheets on the how to identify people's emotions, I think that was really weird. So I didn't think that emotions show that that much through body language and facial expressions. So I think if I didn't learn that then I guess I would've just thought people were just sad or mad all the time and I didn't realize that many emotions[inaudible 00:19:47]… So well, when we would have moments where it was off, I could just read the facial expressions like how on that paper you gave us with the thing, I was looking at that. And then I was looking at their body language too and notice if something was wrong with their life, with slouch or their faces will be long, yeah.

Despite feeling uncomfortable by the novelty of discussing emotions openly in class, Lupe became familiar with emotional content and actively used tools and strategies from

the intervention to inform his relationships with his teammates. Low-EI students also appeared to benefit directly from the inclusion of emotion theory and the practice of skills related to ability EI. One low-EI student, Mily, briefly reflected on the advantage of being emotionally aware when working with others when he said, “People probably won't actually care or actually feel, but since for this class, we learned a little bit more about emotions and a little bit more about facial expressions on do you smile or not or just be sad or depressed. That helped out a little bit more on when we did a project than just doing a project in general.” When discussing which EI-related skill was helpful to use during the project, low-EI student Sica mentioned the use of the journals allowed him to feel better when working with his teammates. He noted:

> Sica: Cause it's (journals) the easy way to talk about whatever you have to say, or what's on your mind, it's kinda way to just get stuff off your mind real quick, whatever you have or wanted to say possibly, or had to say it, you could just say it real quick, then ...
> AZ: Then you felt better?
> Sica: Yeah.

The use of reflective journals was intended as both a data collection method as well as an emotional management technique. Sica benefited from the emotional management aspect of reflective journaling as he used it as an outlet for what he was feeling in order to move on and refocus on the task at hand. Emotional awareness in general became a valued concept throughout the intervention as students reflected on this as an important tool when working with others to accomplish a goal. Nine out of 11 focal students reported the importance they placed on emotional awareness as a result of learning about it during the intervention. For instance, high-EI student Eard discussed the value she found in

being emotionally aware not only of her teammates but also of her own emotions. During her interview, she reflected:

> I think it's really important because if you recognize how others are feeling and they do the same for you, and you're aware of your own feelings, it just helps the process be smoother and it helps with everyone to communicate as well as it just being a smooth process and not so many arguments… When I was upset, I noticed a lot more quickly than if I hadn't learned about the emotional intelligence stuff. And I was able to manage it and I just took a breath or listened to someone else instead of speaking right away.

Another high-EI student noted the importance she now placed on emotional awareness when writing in her 9th journal. In her perspective, emotional awareness was important for conflict resolution in teams: "It is extremely important to be aware of others emotions because a simple calm conversation could fix the problem." Low-EI student Sica commented on the importance of emotional awareness during his interview, stating why he thought it was important to be pay attention to his teammates emotions in order to be productive: "Because if you're trying to get your work done, you have a positive day, or whatever. Someone's kinda dragging you down or not having the same day or they don't wanna do the project or something, maybe talk to them or something, get them in a better mood to wanna both get your work done." The feeling of emotional calibration, or 'being on the same page' as 5 out of 11 focal students named it, appeared to be an important result of being emotionally aware of one's own feelings and those of their teammates. For instance, a high-EI student mentioned this, explaining how this feeling was different than he had experienced in previous group work: "Well, when you're working with a team, you're all on the same page, like we were at the time, but I think when you're working with a group obviously there's less cohesion. I think as a result of

that, the project never turns out how anyone wants it to." Medium-EI student Ecca discussed this point during his interview in response to being asked of the importance of recognizing emotions during teamwork:

> Yes, because that will usually help us work with each other because if we are all separate it really makes it hard for the whole group to function together…I think the part that got us together, using emotions, was getting us together. We all have our differences but at one point we all saw each other and understood that being a team was easier for us. So we ended up get joyful with each other and being happy and generally good.

Ecca noted that being emotionally aware helped create the social bond that was the backbone of the collaborative process, with the bond stemming from everyone feeling as if they were equal on the team. The presence of emotional knowledge and related skills, the inclusion of all voices, the awareness of emotion of one's self and others, the increased confidence and presence in communication and the quality of collaboration are all examples of how students felt this experience was starkly different than any group project they had previously executed in their academic lifetimes.

Teamwork was a different experience than groupwork. A noticeable difference existed between students' experiences as a member of a team during the intervention, and their previous experiences as participants in group projects in their educational lifetime**.** As noted above, many patterns emerged in terms of tangible differences between previous group work experiences and the intervention-based teamwork experience. In my practice as a teacher, it was clear to me how differently the teams functioned throughout the project cycle as well as how their product and presentations were affected by the intervention as compared to seven years of assigning group projects. Enabling successful teamwork has until this study been elusive, the stark

differences in behavior and student attitudes reveals a possible key to successful collaboration and projects is through emotional theory instruction and ability EI related skills practice. Observational field notes demonstrate the difference I noticed firsthand, and these differences were also noted by students through journals and interviews. The following example is representative of consistent differences I witnessed throughout the intervention in support of teamwork differing from group work:

October 19, 2018

- ◊ I have noticed the engagement in teams has remained relatively consistent during this project as compared to previous projects
- ◊ Fewer students are asking for my intervention in their groups when conflicts arise. For instance, I have only been approached by 2 out of 6 teams for help with a member who is either habitually late or who is not contributing. In the past, I would have had 4-5 teams with these same issues.

Students also noted differences between groupwork and teamwork that supported the observations I witnessed. The primary differences that were noted by 11 out of 11 focal students across each EI level included: increased communication; increased accountability in teams; a feeling of a social bond; increased collaboration; and the desire and motivation to do their part for the team in contrast to feeling disengaged and uninterested in working with others in previous group projects. High-EI student Elyn noted in her interview specifically what was different for her during the intervention project as compared to previous groupwork: “Communication. We talked a lot, a lot. It was weird because I don't really talk during projects. We don't really talk to each other. We just get the work done. But with this one, we had to talk.” A second high-EI student, Arly, echoed this with a similar statement, saying “It was really, really different because before in my group projects it's always one person that does the most work and there's

like no communication, just make sure you get it done by this time and that's pretty much it. You don't really build a bond or get to know people." In her interview, high-EI student Eard emphasized that the difference in her experience in the intervention project compared to previous group projects was centered on the knowledge and skills acquired during the intervention itself:

> I think that the word team emphasized working together and using everyone's ideas. And that also helped me better listen to other people and understand if they didn't like something or if they did like something… I think that learning about emotional intelligence helped because I was able to connect more with my team members and viewed them as people, not just partners… So I feel like after learning about emotional intelligence, I felt more comfortable being part of a team. And I felt like everyone really worked together.

For some students what made the experience in the intervention project different was the social bond they felt with their teammates. Medium-EI student Ancy reported, "I feel this project was way more fun than the others. We all told jokes at one point. Everyone had a good time but we still got the work done. Unlike other projects, you don't even socialize." Low-EI student Mily also noted the social aspect of this team experience as compared to others when he reported, "I don't know, I just kind of felt like we all kind of got along more than other experiences in the past. It's kind of like we became more as friends the more you like started doing this than compared to other classes." Medium-EI student Lupe reflected about the difference he experienced in the intervention project when writing in his 6th reflective journal entry:

> I think (my teammates) are changing my perspective on group projects because they're a lot of fun to work with and make stressful deadlines fun and we get it done. I feel how I normally feel in the other group projects but this time I actually want to work because it's fun and with people who make it fun and make me feel included in the group discussions and my ideas are included as well.

Lupe's experience demonstrated the need for social cohesion with a team for it to function properly, as this connection relieved some of the stress surrounding deadlines and created a motive for students to be involved with the team and participate. The intervention experience was a novel experience for student in many ways beyond differentiating group work and teamwork. To delve deeper into student understanding of this unique experience, qualitative data also focused on perceptions based on varying levels of EI.

Perception Difference Based on Ability Emotional Intelligence Level

Both similarities and differences emerged regarding how students perceived teams, themselves, and their role in teams during the intervention. Low-EI, medium-EI and high-EI students appeared to be influenced by focusing on different aspects of the team experience. Low-EI students tended to focus on issues of self, including self-image and what others thought about them in the team; medium-EI students seemed to be versatile when working with others, maintaining the ability to accomplish tasks and work with others while also determining if they would participate on a case by case basis; high-EI students tended to take a leadership position as this is what they seemed to expect to have to take on this role, and their focus tended to be on the functionality of the team and successfully accomplishing the project. Student perception of the teamwork experience differed depending on the lens through which the student brought into focus. Interviews, reflective journals, and observational field notes were collected in an effort to determine what differences in perceptions existed based on EI level.

Patterns of low EI perceptions. Qualitative data analysis revealed low-EI students tended to focus on self-image and how others perceived them during teamwork. However, once these students felt included in their team as a result of the intervention they appeared to be driven by their desire for continued inclusion. These students admitted more of a willingness to participate and communicate more freely with their team within the environment created by the intervention. The focus on self-image among these students and the concern with how they were seen by others was evident through interview dialogue. Student Sica reported that it was important to learn to control or manage his emotions so as not to be socially inappropriate in front of his teammates when he said, "Cause you don't wanna be having a bad day or just have an emotional breakdown in front of everybody, that's not appropriate, you know." Student Mily noted his concerns for how his teammates would view him if he were to not pay attention to emotion when working with his team when he said, "Yes. because that could affect your teamwork and also how they look at you." Student Nica also touched on his fear of how others view him when he revealed self-focused reasons for paying attention to the emotions of his teammates:

> AZ: Okay, so distract yourself by just doing the work instead. What about paying attention to what your teammates are feeling, do you think that's an important part of teamwork?
> Nica: Yeah.
> AZ: Why?
> Nica: Because it would be socially unacceptable if you kept on requiring that they do work, unless it's like ... if you're running by a deadline that's the next day or something it would be socially unacceptable to demand a lot of somebody if they're going through a hard time.

Further, in his 4th reflective journal, Nica noted his awareness of his own behavior and

how he needed to control himself so as not to fall into disfavor with his teammates, writing: “But i initially did it to clear the environment an create less tenssion and easse, which I dont like to work in. Yet I still know that what I did and keep on doing slows the team down. For that reason Ill limit the jokes more and lookout for my ow misconducts.” Despite the focus on how they were being perceived by others, low-EI students demonstrated increased confidence in their social interactions as a result of the intervention project. Observational field notes touch on the noticeable confidence of low-EI students as the project progressed:

October 17, 2018

- ◊ Team B has two students who are considered low EI, yet it is almost as if I would have to check my EI roster to remember who those students are. The students have appeared to assimilate quite nicely into their team and are regularly contributing.

I noticed the teams appeared to level out throughout the project cycle as work and discussions was inclusive and equally distributed. Students were not easily differentiated along traditional group project lines, such as quickly identifying a social loafer or a leader. Instead, students appeared to be equal contributors. In addition to my observations, a high-EI team member noted a difference in contribution from his low-EI teammate than he had previously expected. Student Cart spoke about student Mily in his interview:

> but for (Mily), it definitely seemed like he was more reserved and I know because I used to be that kid too. It's hard to get your ideas out when you're not talking obviously. So I think that fact that we were communicating more, that kind of helped him come out of his shell. And I think he thrived under that environment.

Each of the low-EI focal students, as well as other low-EI students who were observed

during field notes, demonstrated increased confidence as the project progressed. The contributions of these students were important as they not only defeated previously held expectations about what they could contribute, they also were a crucial part of building a social bond and sense of increased social responsibility through their contributions.

Patterns of medium EI perceptions. Medium-EI students seemed to be social chameleons who could choose to either be great contributors to the team or slack-off and slow the team down, depending on their motivation on a case by case basis. In this case, it appeared that many of the medium-EI students chose to participate and consciously "try", testing out the EI skills they learned in the training. This attempt to engage in quality participation seemed to have led to increased confidence in their social interactions with their team and improved confidence with their communication skills. These students noted factors that motivated them to contribute to their teams, including matching communication with communication and enjoying the social connection they developed with their teammates. Student Shley touched on what motivated him to actively participate in his team during an interview: "For me, I kind of communicated more. I was more social, just because the fact they were more social too." In his 4th journal entry, the same student noted the impression his team was having on him and provided clues to what spurred him to continue to contribute to his team, writing:

> I came in (to class) kinda like with not trying to do anything, It felt like the rest of my day was going to be bad but just talking to my group was pretty calming and funny.

Student Lupe wrote about the impact his team was having on his motivation to contribute in his 6th reflective journal. Lupe acknowledged that feeling as if he was being

heard and listened to by his teammates encouraged him to continue to participate, writing, “I feel how I normally feel in the other group projects but this time I actually want to work because it’s fun and with people who make it fun and make me feel included in the group discussions and my ideas are included as well.” Observational field notes also captured the progression of these social chameleons as the project continued, with instances of behavioral differences that were witnessed. For example, during the third observation I wrote about student Ecca, who had struggled with tardiness early in the school year. However, on October 17, 2018 I wrote:

- There are a few students who have struggled with tardiness all year and are now consistently coming to class. When I asked 9556-Ecca what had changed, they said they really liked their team and didn’t want to let them down. They also said they decided to put in some effort unlike before.

Each of the three medium-EI students noted how this experience working with a team had improved their confidence when working with others. The increased participation and communication in this project, rather than sitting on the sidelines completely capable while others did the work, seemed to have not only improve their overall experience but equip them with a sense of confirmation that lead to increased confidence. For example, student Ancy reflected on how this experience impacted him personally and how it will impact his future participation in teams during an interview:

> I feel I would socialize more. I would be more confident to talk to someone or again, if I see someone feeling sad or something, that I kinda know that I would be able to step up and say something and not just let them be. I would actually say something.

Medium-EI students used this intervention as an opportunity to actively participate and in many cases realize their potential as contributors on their respective teams. The

participation of these students seemed to create the bridge between low-EI students who focused on how others perceived them and high-EI students whose focus was on the functionality of the teams, which was dependent upon participation of all members.

Patterns of high EI perceptions. High-EI students appeared to be the traditional leaders of group projects who would assume this role in order to ensure the project is completed and their grades are secured. In this instance, qualitative data revealed their focus was on the functionality of the team and the benefits the intervention provided to enhance functionality. Although the focus was on the execution of skills to improve the teamwork experience, over time it was revealed that high-EI students noted they were pleasantly surprised by the abilities of their teammates whom they assumed would be more dead-weight than participate in the project. These students also acknowledged their role in the team as well as their perceptions of their teammates as being rather rigid, and noted the importance and value of including all voices in the team discussions and ensuring all members felt heard. These students admittedly tended to be most concerned with their grades, and therefore their priority was on completing any group project even if this meant completing the project by themselves.

During the intervention these same students reported an acknowledgement of this preconceived approach to group projects, and discussed ways they attempted to change their own behavior to ensure the team was productive throughout the project cycle without letting all of the work fall on their shoulders while struggling with letting go of their concerns regarding the functionality of their team structure. Cart expressed this concern in his 4th reflective journal, writing:

> I have mixed emotions about our team so far. We don't really have a solid plan and we're struggling to brainstorm and come up with one. That being said, most of the group is very enthusiastic (especially Jessica), which is promising for our project. I have faith that we'll be able to figure out and plan our ad campaign soon, we just have to get more of an idea of what we need to do first. Once we figure out how to appeal to our target voters, I think it should go very smoothly, because we have the drive within the group to get all the work done and I think overall we're pretty motivated. But, we are definitely having trouble getting past that first step and coming up with a course of action. So I guess you could say that I'm hopeful and concerned at the same time. I expect some more roadblocks in the future, and I definitely anticipate some disagreement, but I still have faith in our group to come to an agreement and work together to finish the project.

Student Eard used the reflective journal as an outlet for her frustrations with her team while also serving as a channel for her to recognize her behavior and that of others, and reflect on what could be done differently. In her 4th journal, this student enabled a window into her mind regarding her struggle as a traditional leader and what she attempted to do differently during the intervention:

> I feel like my team thinks of me as the 'leader' which is why I've been trying to let others share their ideas, but when I don't talk, even for like five minutes, they think I'm mad, so either way I don't win. On the other hand, we have had a couple of debates over ideas for the project which I think is a good thing because that means that my team members do actually care somewhat about what we are doing/talking about.

Observational field notes taken during the second and third observation sessions noted the behavior of high EI students with regard to their focus on the functionality of their team. During the second observation on October 15, 2018, I wrote about a brief conversation between two high-EI students on the same team. One of the students was concerned with her team goofing off too much, and the other calmed her down by reminding her it was still early in the process and they just needed more time. In addition to focusing on the functionality of their teams, high-EI students also admitted to trying a

new role aside from their traditional role as a team leader and revealed insights they had as a result of trying something new, including the value of communication within a team. In an interview, student Cart reported:

> I actually do feel a lot better now. I think like I said before, in the past I would just think I either would just take my part of the project and do it and give it to whoever was in charge and they would take everyone else's stuff. But now, even if I'm not the designated mediator or leader or whatever, I'm more ... I feel more inclined to reach out to someone and maybe ask them what they're doing for this part and then take that into account when I'm doing my part of the project.

The sentiment student Cart reported above was consistent with earlier journal entries he created, reflecting on what he would normally do as compared to how he has changed his behavior during this intervention and what he learned by making these changes. Later, in his 9th reflective journal, the same student concluded his writing with how the intervention, the acknowledgment of his past behavior, and his attempt to try a new role had impacted his perceptions of teamwork:

> As a result of this project, I've become much more aware of how I interact with others in a team environment. I didn't realize this before, but I have the tendency to plan out the project with the group and then remove myself to do the work independently, then reconvene with the group with the finished product. In this project, we worked as a team much more (for some parts, at least). Communicating like this made it feel much more like a true team; like we were all on the same page as opposed to simply working towards the same goal. --In the future, I'll continue to communicate with my teammates and be honest with them about how I see what they're doing (or not doing). When everything is out in the open I think the project goes much more smoothly and the finished product is of higher quality.

Student Arly also noted how changing her traditional role intentionally for the intervention impacted her perception of teamwork and reflected on how emotional awareness spurred this changed attitude. By being more aware of her own emotion and

peoples' reaction to her, she was able to make changes that created a better functioning team. In her 6th journal, she wrote:

> Working with my teammates did change the role I felt I had in the team because I don't feel like I have to carry the team I can rely on them to do their part. Channeling our emotions has helped because from the beginning when I noticed that some of them had not finished the definition of some propositions when we equally divided them I used my frustration in a calmly manner and let them know that everyone needed to do their part and from there on mostly everything has been going smoothly. I have learned that simple communication goes a long way.

Another observation noted by a high-EI student was with regard to the dynamic nature of roles while working as a team. Even though roles were assigned for organizational purposes, student Eard reflected about the need for all team members to take on various roles at various times as the situation calls for. In her 6th reflective journal, she wrote, "I feel like working with my team has showed me that I'm not the only person that should harmonize, it's everyone. For example, I keep the peace but if I'm angry or frustrated, someone else can be the harmonizer. I feel that the roles apply to everyone at some point or another during this project." Observational field notes captured the presence of students organizing themselves early in the intervention project in a different way than expected. During the first observation on October 11, 2018 I wrote:

- I am surprised by how the team has organized itself. The one of the two students I had assumed would take over as the leader, high EI and a personality that appears to be comfortable speaking in front of others and contributing ideas, is remaining relatively quiet and observant during the initial team meeting (8:29am). This student has reported themselves as the team time keeper rather than leader (students were given roles to choose from)

The reflection I had around this observation is that preconceived notions about what students will contribute is also present for teachers. In the dichotomous role of researcher

and teacher, I can see how I am also a potential obstacle to collaboration in the assumption that certain students will perform along certain behavioral lines and not necessarily enabling any student to attempt change. In addition to acknowledging my own rigidity with role expectations, high-EI students also noted relaxing their previous behavioral standards in an effort to include the voices of each of their teammates for the success of their team as a whole. Supporting these conclusions were reflections about the importance of emotional awareness in general, as well as EI theory and related skills learned during the intervention. Student Elyn wrote about what she learned from this intervention in her 9th reflective journal:

> I learned to take others feelings into consideration, and to listen to opinions. That opinions aren't always there to hurt but actually end up helping you… I think I will take plenty of skills that I learned from this project and use them in the future, like others feelings are very important you can't have a good communication with someone if you don't hear them out or let them express certain ideas or opinions. In the span of these 2 weeks I learned to collaborate and trust others in getting certain things done.

Student Eard also reflected on the importance of including all voices of her team, and how noticing this changed her behavior as she worked with others to be more inclusive. Further, this student demonstrated a lesson learned about teamwork when she stated, "I think that helping everyone feel like they're being listened to just made them feel better. Even if their idea wasn't necessarily put into action, they just wanted to be heard." Qualitative evidence analyzed in this study confirmed students' perceptions of teamwork were impacted in various ways by the intervention. Regardless of the different focus on teamwork and various needs of students with each EI level, journals, interviews and

behavior in observations showed consistently improved perceptions of teamwork as a result of the intervention.

Perceptions of teamwork were improved in part by pairing students with different EI levels. Differences in perception stemmed from what the student seemed to focus on as addressed earlier. Observations over the course of the five-week intervention project following the intervention training supported the conclusions drawn by student participants. Low-EI students appeared to become more comfortable with their peers as time went on, with more contributions coming as the level of communication increased. These students also seemed most happy contributing when the atmosphere in the team was light and playful, furthering the social bond of the team. High-EI students appeared to lead the teams in terms of functionality, ensuring the project was meeting the pre-set benchmark deadlines. High-EI students also appeared to be collaborative and encouraging to their peers to participate and encourage a sense of inclusion. Interviews, journal entries, and observational field notes provided insight into how students with high-EI and low-EI evolved their perceptions of teamwork based on their experience with their relative-EI counterparts during the intervention project. It should be noted that although both low- and high-EI students had specific focuses during the intervention, the quality of the product was not a top priority. Rather, the students focused on the processes of teamwork as a novel experience with a consequence of less than spectacular project outcomes. Perhaps after multiple iterations of working in teams the focus would return to product quality.

High-EI student realizations led to behavioral change. High-EI students realized their traditional role as a leader was rigid and perhaps prevented quality collaboration. These students became more aware of their traditionally held stereotypes of roles in teams, and became more aware of how to build a team rather than a group in order to enable collaboration. Through this recognition they were pleasantly surprised by their peers who they had assumed would not contribute. This self-awareness led to behavioral change within the team, and enabled all members to contribute. Four out of the four high-EI students recognized many ways in which the intervention challenged the traditional beliefs they held about team projects, including how their own role they had grown accustomed to playing when working with others had shifted as a result of what they learned throughout their experience. Student Cart commented on the difference he noted between this intervention-based team project and previous group projects during an interview:

> I definitely communicated more than I usually do. We usually just kind of divide the roles at the beginning and then we kind of go off and do our own thing and then just bring it all together at the end and hope that it all fits, but this time I think we were definitely more ... We more in tune with each other and we knew what everyone else was ... Kind of what everyone else was going for with their part of the project.

For Cart, the social connection prompted increased communication and a different experience. For other high-EI students it was the experience as a whole team that altered their perception of working with others in a positive manner. Student Eard reflected on the team experience and how it had changed the way she views working with others. She noted behaviors she learned were positive and negative, and how teamwork could be different than she previously considered in her 6th journal entry, writing:

> I think that the whole team has kind of changed my views. They've made me realize that there are moments where it's okay to relax a little bit, but they've also showed me what poor communication looks like and at times it's super frustrating. The way my team has been working reminds me of team projects I've worked on in the past. I do feel different about this project than previous projects because I feel like the word 'team' really made a difference when starting this project and I feel like this has been one of the only groups that will consistently communicate through a group chat. I feel like we are working together more than I have on other group projects.

Each focal student who was scored as having high EI also recorded the change they made to their behavior as a result of working with others on their team, which was in part influenced by the reciprocal nature of teamwork with their low-EI counterparts. Student Elyn discussed the impact consistent communication had on her experience with her team during an interview. When asked about what was different with this experience, she said:

> Communication. We talked a lot, a lot. It was weird because I don't really talk during projects. We don't really talk to each other. We just get the work done. But with this one, we had to talk. Yeah. Because I'd never really talked it out. Usually, I would just deal with it. And this time, it was ... I don't know. It just felt different.

As noted above, high-EI students tended to be the traditional leaders of the group who would rather get the work done then worry about including their lower performing peers. It was through increased communication with these peers that students were able to usher in productivity among all members. Student Arly touched on this during her interview, stating "before working in projects, if I felt frustrated, I really wouldn't say anything, id just like keep it in or do the work myself, but in this case, if I felt frustrated, I would let them know. Like, what you're doing, it frustrates me." Later, she added that a slight behavior modification she made intentionally, coupled with emotional awareness, to improve teamwork helped involve others and reduce conflict. She said, "Before I had

this one project last year and I was really mad because no one was doing anything and I let them know I was mad, but not in a calm manner. So I feel like being calm creates a different response." The focus on emotion in combination with how emotion influenced behavior became apparent in the desire to change Arly's own behavior. Subsequently, witnessing the positive effects the changed behavior had on her overall team experience encouraged Arly to reproduce this behavior moving forward.

High-EI students value the importance of emotional awareness when working with others. High-EI students also recognized the importance of being emotionally aware of their teammates and themselves. For instance, a high-EI student tended to feel frustrated when their teammates weren't contributing or were "goofing off." However, with the skills learned to remain emotionally aware of themselves, this student consciously learned to manage their own feelings of frustration and find different ways to control their emotion and communicate with their teammates to resolve this issue. The knowledge and skills acquired during the first portion of the intervention paved the way for high-EI students to approach teamwork differently than they would have approached a group project in the past. Each of the four high-EI focal students noted the practical application of their new knowledge and skills at some point in their teamwork, and how this application improved the functioning of their team and hence their overall experience. With regard to emotional awareness, student Cart discussed the importance of being aware of one's own emotion while working with others during an interview:

> Well you feel things for a certain reason obviously. So if you're frustrated by how the project's going, that is gonna reflect on your work and it's kind of the result of

> what's already happened. It's not really a good sign if you're not happy with what's going on in your team and it needs to be resolved.

Student Elyn also noted the importance of emotional awareness insofar as it can make teamwork more accessible. During an interview, she remarked "If you're feeling a certain way and you know your partner or your teammate is feeling another way, you don't want those emotions to conflict, come together and make such a mess of it." Student Eard noticed the importance of emotional awareness with regard to accomplishing the goal of teamwork, creating the final product. In an interview, she said, "I think it's really important because it helps you to become more aware of how you're dealing with people's reactions. And it also helps whatever product you're trying to create be better, in a sense." With regard to team functionality and the reduction of conflict in teams, she added that increase communication to recognize emotions of others in order to make the process smoother with an additional perk being "not so many arguments."

Behavioral change directly stemming from information learned during the intervention was another area that high-EI students reported impacting their perceptions of teamwork. Student Eard recorded her changes in behavior as a result of skills she learned from the intervention, detailing these changes in an interview:

> Strategies I used was just to identify how I felt like being able to name my emotion just helped me because then I thought about it and thought is it really something to be frustrated about? Or is it really something to be angry about? And I think hearing the words in my head just helped me take a step back and maybe keep to myself for five minutes or just realize that I can turn this into a positive emotion… before we learned about it, that I probably would ... There probably would have been instances where I would have said something. This time I held my tongue and I was able to identify how I felt.

Behavioral changes were not necessarily difficult in size and scope, as student Elyn reflected on simple considerations that became the basis for behavioral change in her 9th journal, writing that she "learned to take others feelings into consideration, and to listen to opinions. That opinions aren't always there to hurt but actually end up helping you." Behavioral change among high-EI students appeared to be commonplace during the intervention, and as such, other members of the teams were encouraged to participate by feeling more included. With the inclusion of these peers came a sense of collaboration and social connection along with previous expectations of teammates being shattered.

Not only were high-EI students pleasantly surprised by the contributions of the peers they had previously had misconceptions about, but many students also concluded that collaboration was enabled through increased levels of inclusion, communication, and control of emotions. The information and skills acquired throughout the intervention were noted by each of the four high-EI focal students as they demonstrated the practice of this information and these skills in their reflection of their experience working with members of their team. Student Elyn remarked on her changed perception of teamwork during her interview, stating "I feel better. I feel so much better. I feel more confident in talking to others and communicating using emotion because before I'd never been able to use emotions. I wouldn't talk it out. But now, it's just like I feel a lot more comfortable and it really helps." Another high-EI student also touched on the difference in perception of working with others as a result of the intervention. In her interview, student Arly concluded "I felt more confident in our group work because I don't know. Just felt like we could talk to each other and if anything was not going well or if we had a different

idea… Now I feel like I can do team projects because before I would dread doing them. I'd rather work by myself."

Observational field notes also revealed insight into the phenomenon of collaboration that was occurring within teams during the intervention. During the 4th observation on October 19, 2018 I noted the following:

- ◊ Fewer students are asking for my intervention in their groups when conflicts arise. For instance, I have only been approached by 2 out of 6 teams for help with a member who is either habitually late or who is not contributing. In the past, I would have had 4-5 teams with these same issues.

As demonstrated by the evidence above, high-EI students were impacted in many ways by the intervention. While attribution of working with specific teammates changing perceptions was not explicit in the evidence, the experience of working with other students who had lower EI than high-EI students did created an opportunity for high-EI students to try recognize their own rigidity when it came to approaching their work with others; the importance of including all members whose voices may have previously been silenced through the intimidation of working with traditional leaders; and the importance of emotional awareness and behavioral changes to create an environment more conducive to working with others.

Low-EI students reported the social connection was an important aspect of their teamwork experience. Low-EI students' perceptions of teamwork and their role in it were influenced by their teammates insofar as being driven to participate by a focus on their self-image and encouraged to continue to contribute through the social connection developed within their teams, as reported by three of the low-EI focal students. As such, low-EI focal students' interviews and journal reflections focused on social connections

within the team and how these were improved compared to previous projects. For instance, it was revealed that low-EI focal students were happy to be included, felt more confident communicating with their peers, and appreciated the social bond they developed with their teams which spurred them to actively participate more than they would have in the past. Although team bonds became apparent as a part of the intervention experience, a sociometric was not used to measure the number of friends or strength of bonds between students. This would be a tool to be used in future studies.

Low-EI students were also positively impacted through their experience with their teammates, resulting in improved perceptions of working with others as they learned they could successfully be contributing members of a team. For instance, during an interview student Sica reported feeling positive toward working with others and how this would be helpful in the future, stating,

> I feel I have a pretty good ability working with a team now. Now I know if I go to another class and we have a project, it's not a real project, or it's supposed to be like, I could probably, I don't know, I could try to talk to other people or whatever, try to make it like an actual project, where everybody starts to work and stuff.

Further, the social connection that was developed during the intervention project contributed to the change in perception this student had about working with others, noting "I don't know, I just kind of felt like we all kind of got along more than other experiences in the past. It's kind of like we became more as friends the more you like started doing this than compared to other classes."

It was in large part the feeling of being included that influenced the perception of student Nica. Whereas his previous perception of working with others in groups was a

compartmentalized experience, “I see a project kind of like you do it, get over it, and then that's it. You won't have to work with those people ever again.” The intervention impacted his viewpoint in a significant way. In his interview, when asked if he preferred traditional group work to the teamwork of the intervention, he stated the following:

> Nica: ... then, yeah, I would prefer this type of style.
> AZ: The teams.
> Nica: Yeah.
> AZ: The team style, why?
> Nica: Because it feels a little bit more human. And I know that's kind of weird to say, but yeah.
> AZ: Because you have more of that connection?
> Nica: Yeah.

Social connections featuring low-EI students were also recorded through observational field notes across four of the six observation sessions. Noticeable behavioral changes among low-EI students occurred from the beginning of the intervention project cycle through the end of it. For example, during the fourth observation on October 19, 2018 the following was noted:

- ◊ Last week, a team member on team C appeared to be closed off with arms crossed, headphones in the ears, hood on, and a look of disinterest on their face. I noticed today (8:24am) that this same team member still is not verbally contributing a lot, but they do not have earphones in, arms are uncrossed and they appear to be actively listening to the team with a look of interest on their face.

An earlier observation summed up the behavioral changes of low-EI students in their respective teams. Whereas low-EI student participants had been easier to observe early on in the intervention, I noticed it became more difficult to identify them as I found myself checking my EI score roster more frequently as time progressed. On October 17,

2018 I wrote:

- ◊ Team B has two students who are considered low EI, yet it is almost as if I would have to check my EI roster to remember who those students are. The students have appeared to assimilate quite nicely into their team and are regularly contributing.

When reflecting on the differences between previous group projects and the experience of working with others on a team, low-EI students discussed noticeable differences based on feeling comfortable and confident enough to contribute, with the feeling of confidence stemming from their interactions with their peers. For instance, student Sica wrote in his 7th journal about why he enjoyed working with his teammates:

> I would also like to say that this group is a lot easier to work with than others because the people in the group are more open and talkative and interactive.my group mates are nice people who are not afraid to talk or share their party that's why i like them and that how we get re work done because all the ideas we get and where are the more ideas we create and do and make as a group.

Student Nica also described the release he felt in terms of comfortability with his team to behave in a more extroverted way then he normally would, chalking this up to an increase in confidence he noticed. In his 6th reflective journal, he wrote:

> Well beinng with such a strong group kinda makes me feel as though I have the space to play around and relax…Also I play around now because I have never done so in the past, mostly because I thought it was dumb and I didnt have the confidence or people to do so.

Whereas low-EI students did not mention specific people who impacted their perceptions on teamwork, the focus on their personal experience in general being positively affected by their teammates was evident throughout the reflective journals and interviews. However, at least one low-EI student expressed pessimism about having the same quality experience with another team in another classroom on campus. In an interview, student

Nica noted his concern over whether the information learned during the intervention would truly be transferable to other classrooms if other classrooms weren't also practicing these methods:

> I don't think you have to have this sort of understanding to be able to do it again. Not everybody ... no one else in campus works this way. It was only us for a group project… it's kind of hard 'cause most people are in the system of okay we have to get stuff done, we have to divide and conquer and everybody's on their own page. I do understand the system that you kind of set up. It's not so much like, okay, divide and do everything. It's kind of like work together and collaborate to get stuff done. But not a lot of people like to work like that

The pessimism expressed above is indicative of the difference between group work and teamwork as practiced in classrooms at least across the campus of my high school, and perhaps across other campuses in the state of California and conceivably the US. Students in the present study demonstrated the willingness to change their behavior, to learn about and value emotion when working with others, and have positive experiences working in teams, yet lurking in the shadows of these positive epiphanies is the ever-present fear of regressing to the mean; if this is not practiced in all classrooms, sustainability becomes a concern.

A sense of inclusion played a motivating role for low-EI students. Through qualitative analysis it appeared that low-EI students' role in teams was influenced at least in part by self-conscious patterns, such as not wanting to slow down the team, as well as wanting to feel included. The feeling of inclusion experienced by three of the low-EI focal students lead to a sense of social responsibility to not let the team down and appeared to motivate these students who wanted to continue to be socially included. Throughout the course of the intervention, low-EI focal students reported being driven to

participate and overcome self-conscious urges by their desire to be socially included by their teammates. The inclusion of all voices noted earlier by medium-and high-EI students resulted in increased confidence on the part of low-EI students who felt they were being heard, and that their teammates wanted them to contribute. This feeling led low-EI students to be more aware of their behavior and, using the knowledge and skills learned during the intervention, increased their active participation in the group and thereby increasing and enhancing the presence of quality collaboration.

Student Mily spoke about his desire to actively participate with his team during an interview with the newly learned skill of being emotionally aware, saying,

> It's important because it shows more of you being more happy and active on working together than you not really showing emotions, staying off the team, being quiet, not actually talking to them or anything like that. It shows that you need to show a little bit more effort on knowing that you actually do care about this project and it's everyone else in the project.

Mily was concerned not only with presenting positive, 'happy' emotions to his teammates but also that by doing so he was demonstrating his commitment to his team. Student Nica discussed his attempt to behave differently with this team than he had in previous group experiences, as he decided to forgo his usual effectiveness with the divide and conquer strategy so common in group projects and instead focus on the social connections with his teammates. In an interview, he reported:

> usually I'm more about us being effective, but this time I tried to focus on us being inclusive towards everybody's needs and towards everybody's different moods on the day. We weren't as effective as other groups I've had in the past, but that's something I even struggle with

Despite what Nica felt may be a sacrifice in terms of effectiveness in the name of

improved social connections, he also noted the social connection being an important piece of teamwork. He commented that while being effective could be seen as important, feeling socially connected is just as necessary as it could be the drive for many students to actively involve themselves in the project, saying, "The people that they work with may be their passion" rather than the outcome of the product itself. Focal students from every EI category made mention of the presence of a social connection they had not experienced in previous group work. Perhaps Nica has articulated it most clearly with this sentiment, that perhaps connections among teammates is what will drive a team to success.

Improved Perceptions in All Four Branches of EI Skills

The perceptions of students regarding their ability EI related skills and perceptions of working with others in a team were influenced by the 7-week EI intervention. Students had opportunities to reflect upon the skills related to the 4 branches of EI throughout the project cycle as well as their experience working with teammates on a team. Subsample participants noted meaningful changes in their perceived ability-related skills and their perceptions of working with others on a team as was recorded through confidential reflective journals and semi-structured interviews while all sample students were observed during observational field notes.

Students experienced improved perceptions in all of the four branches of the Four-Branch Model. Improved perceptions of EI related skills developed in the following areas: accurately identifying the emotions of self and others (Branch 1), using emotions (Branch 2), understanding emotions (Branch 3), and managing emotions (Branch 4).

Further, woven into the improved perceptions of EI related skills throughout each branch was the simultaneous recognition of improved perceptions of the teamwork experience. The first portion of the intervention focused on emotional theory and strategies used to build skills related to each of the four branches of ability EI in the 4 Branch Model. Branch 1 of the 4 Branch Model concentrates on accurate perception of emotion of oneself and others. Focal students reported improved perceptions of their ability to recognize emotions in themselves and in their teammates. Medium-EI student Shley spoke about recognizing facial expressions as was taught in the intervention and how he used this skill with his teammates in an interview, stating:

> Shley: For me, it's just like I pay attention to the emotions of people. Like physical emotions.
> AZ: So, the body language?
> Shley: Yeah. Body language. I think that kind of helps more to kind of connect.

Another medium-EI student, Ancy, noted during his interview how the recognition of the emotions of his teammates through tone of voice as we had practiced during the intervention helped him navigate through potential conflict when he remarked, “I think the first expression from their tone of voice because I remember there's an instance where they wanna sounded like they were discussing what is [inaudible 00:01:09], and you could tell by their tone of voice how frustrated they were because they wouldn't agree.” Further, this student reported the usefulness of learning how to recognize facial expressions when working with his team:

> Ancy: Yeah. Like I said, I was more aware of what they were feeling. You showed us those faces of what people make when they're angry or stressed or annoyed. Things like that. That-

AZ: That helped.
Ancy: I was able to identify that more.

Another low-EI student discussed his concern over the skill of recognizing the emotions of others as possibly being weak, although he wasn't sure. In an interview, student Nica revealed "I can (recognize emotions), but at times I've probably slipped up. I have been told that in movies there's certain scenes that people get that I don't. And they're based on emotions sometimes. But usually I do." Medium-EI student Lupe discussed the use of tools we practiced with during the intervention as a method for assisting him with recognizing the emotions of his teammates during awkward moments when he reported:

> So well, when we would have moments where it was off, I could just read the facial expressions like how on that paper you gave us with the thing, I was looking at that. And then I was looking at their body language too and notice if something was wrong with their life, with slouch or their faces will be long, yeah.

High-EI student Arly also made note of using the tools we practiced with during the intervention while she worked with her team. She said, "After we had that one section where we would look at the picture on the wall and say, 'Well, is this person happy, sad or angry?' And when I was working with them, I could tell when they were frustrated or if they didn't feel comfortable with what we were doing." Observational field notes corroborated the experiences students reported during their interviews. During the second observation on October 15, 2018 I observed two instances of students using the knowledge and/or skills learned from Branch 1 and these were recorded on the following field notes:

- ◊ Team B has a member who discreetly looks at the worksheet on facial expressions I had given them last week when we were going over ability EI.
- ◊ I overhear (Student 1) speaking with (Student 2) at the end of class. (Student 1) is

> concerned that her team is goofing off too much and that they aren't working fast enough to accomplish their tasks. (Student 2) says, "Yeah, I agree, but it is still early. We need to give them some more time, everything will work out."

The second branch of the Four Branch Model emphasizes the use of emotions, identifying what emotions match which activities and when they would be detrimental. Additionally, during the intervention students not only learned about using appropriate emotions during certain instances but also how to consciously change their own mood in order to be most productive with their team. Students used this information and the related skills during the intervention project cycle, as is evident through interviews and observational field notes.

High-EI student Arly noted the difference between her experience with the intervention project and previous projects centered in large part on being aware of emotions in general, and also examining the emotions she was experiencing to attempt to find the root cause and then attempt to change those emotions. In an interview, she reported the main difference was "pretty much thinking about it. Like, why do I feel this way? Yeah, just thinking about it because with group projects I really wasn't paying attention to emotions or anything, just doing the work." Medium-EI student Lupe reported about his new-found ability to recognize what was making him feel certain ways, as related to Branch 2. In an interview, he stated:

> Lupe: I think it was really kind of strange because I never really thought about my emotions in group projects before and how they would affect me. And I just didn't realize the root of what causes those emotions because I would just be like, oh, I'm feeling this so I don't know if it's bothering me so I'm just feeling it, so yeah. I think it just made me realize a lot of different, it opened a door to a bunch of crazy things I never thought will really happen in-
> AZ: That was connecting?

Lupe: Yeah.

During the fourth observation, an instance of a student using emotions to redirect the mood of his team was captured when the student was overheard diffusing a tense situation in his team and attempting to bring them back to a productive state of mind. He used humor as a way to not only diffuse the situation but connect with his teammates, commenting on resolving the issue through journaling rather than being in conflict as a team, touching on a shared experience to increase social connections.

Branch 3 of the Four Branch Model emphasizes understanding of the root causes of emotions felt by oneself and others, as well as predicting emotional "what next" scenarios based on this information and the use of emotional vocabulary. One high-EI student reported a strategy she and her team would use when they felt there was something going wrong with their work together. In an interview, student Elyn reported communication about emotions was an important part of regrouping and getting back to being productive, saying:

> I feel like we talked it out a lot. I would talk with one specific person and they'd be like hey, this is not working out. And then, we'd all huddle up together. We'd all explain what we were feeling and how we had to pick it up.

High-EI student Eard reported being able to recognize the root cause of the emotions of her teammates helped her navigate conflict better, and was used to prevent conflict in the future. In an interview, she reported:

> And then, as soon as I said, let me hear what you want to say, they calmed down. So I felt like not being heard or just being swiped away, that's what caused frustration and anger in a lot of the teammates, including myself sometimes.

Medium-EI student Lupe discussed the use of emotional forecasting, or analyzing the

emotion in situations with his team, and determining what would be the best course of action to achieve the desired goal. In an interview, this student noted the use of emotional forecasting, among other EI related skills: "I think the emotional forecasting putting, talking, having those inner conversations with myself and understanding why someone feels the way they feel based off how their body language and their facial expressions are." Observational field notes supported the students' use of understanding emotion. In one instance during the 6th and final observation, one student seems to understand the emotion of their teammate and use this information to reassure them; in the next instance on the same day, another student on a different team is heard remarking about a teammate's absence. The following observations were recorded:

- ◊ I overhear one team as they are preparing to present. One of the teammates does not look very excited to be presenting and is in fact looking very nervous. Another teammate says 'Don't worry, I know you aren't ready to speak publicly. I can take your part if you want' (8:03am). The nervous teammate is very grateful and appears to relax as the team takes the stage.
- ◊ 1 team of students is overheard having a conversation about their teammate: 'I can't believe he didn't show up. I thought he was doing really well with us this whole time and now he won't be here to do the presentation. He is probably scared.'

Three of the high-EI students made explicit use of emotional vocabulary either themselves, or as a strategy for working with their teams. In an interview, student Eard remembered noticing an increase in emotional vocabulary during the project cycle, stating "I noticed everyone was a lot more aware of what they were doing and how they were acting in the team. And I noticed a lot of, or most of my teammates, used the vocabulary for emotional intelligence, like I feel frustrated." The same student also reported the benefit for being able to name the emotion she was feeling, as part of Branch

1/perceiving ones' own emotions and Branch 3, understanding emotions. She said,

> Strategies I used was just to identify how I felt like being able to name my emotion just helped me because then I thought about it and thought is it really something to be frustrated about? Or is it really something to be angry about? And I think hearing the words in my head just helped me take a step back and maybe keep to myself for five minutes or just realize that I can turn this into a positive emotion.

A second high-EI student noted the way she used her understanding of emotion to resolve conflict within her team. Student Arly reported during an interview that communication was key to working out team issues: "It's easier to communicate with people when you know how you're feeling and why you're feeling the way you're feeling. So, it helped during the project because we were able to tell each other, like, 'Oh. This is bothering me and it's making me feel this way. How can we fix it?'"

The fourth and final branch of the 4 Branch Model centers on managing the emotions of oneself and others and involves determining the desired outcome of the situation as well as assessing possible actions to take to achieve this outcome, while also pondering 'what-if' questions to gain a greater understanding of how to achieve these desired results. Throughout the intervention project cycle many students noted the use of this branch as a beneficial skill for teamwork and life in general that they had not been aware of previously. Student participants also noted the behavioral changes they were able to make, a manifestation of the cognitive process for managing emotion, to achieve the desired outcomes with their teammates. In an interview, high-EI student Arly reported on the difference in response she would get by managing her emotion of frustration with her team:

> even if you feel frustrated, making sure you say it in a calmly way to them made a big difference because I feel like if I didn't portray my emotions a certain way or if I came at them in a bad way, then I wouldn't have gotten the response I got… Before I had this one project last year and I was really mad because no one was doing anything and I let them know I was mad, but not in a calm manner. So I feel like being calm creates a different response.

She also noticed how she changed, or managed, her behavior differently during this experience than in previous group projects and discussed the difference this made for her and her team:

> When I was upset, I noticed a lot more quickly than if I hadn't learned about the emotional intelligence stuff. And I was able to manage it and I just took a breath or listened to someone else instead of speaking right away… I think I did get frustrated. And there were sometimes where I better managed it and sometimes I just kind of ... I noticed I kept quiet and I distanced myself when I was a little frustrated because I didn't want to argue with anyone.

Medium-EI student Ecca also commented specifically on his newly acquired skill to manage his emotions in order to work better with his team. In an interview, he reflected on how managing his emotions enabled his team to have improved collaboration: "I noticed when I was controlling my emotions it made it easier for me and for my team mates to be together. I didn't want my team mates to be far apart from each other." Low-EI student Sica also noted how managing the emotions of his teammates through his own actions was beneficial to the team as a whole. In an interview he referred to teammates who may have been experiencing emotions contradictory to productive teamwork, and he would attempt to improve their mood to get the team working again:

> Someone's kinda dragging you down or not having the same day or they don't wanna do the project or something, maybe talk to them or something, get them in a better mood to wanna both get your work done

Observational field notes taken throughout the course of the intervention project cycle

also made note of the manifestation of the management of emotions of individual students on themselves and on others. During the third observation on October 17, 2018, the following scene was documented of a student seemingly using their emotional management strategies on them self:

- ◊ (Student 1) is starting to look frustrated with his team. He has a look of consternation on his face and is remaining quiet. He is acting differently than usual, as he is usually the captain of the ship within his team. Three of his teammates are editing the video on the iPad and a fourth member has his head down, with his hood on. I can see (Student 1) take a few breaths and tap his fourth team member on the shoulder, and it seems he is asking him to join the activities of the team. Once the fourth member rejoins the team, (Student 1) begins to relax and go back to his normal state.

In another instance during the same observation I overheard another student mention to their teammates they were "going to my happy place, I will be right back" and before closing their eyes and apparently checking out mentally for a few moments before returning back to the work at hand with a positive attitude. During the fourth observation on October 19, 2018, I overheard another team of students as their team began to experience escalated disagreements. Within the team one student stepped up and attempted to diffuse the situation and manage the emotions of their teammates through humor.

Complementarity

Qualitative and quantitative findings in the present study aligned in support of one another, creating complementarity of results. As noted previously, the research design for the present study was a convergent parallel mixed methods design. This structure was used as a way to mitigate weaknesses stemming from the use of only one method of data collection and analysis. A convergent parallel study combines their strengths and limits

weaknesses to create a valid and complete conclusion (Plano Clark & Creswell, 2015). The quantitative data analysis provided a platform for overall trends to emerge based on responses from all 34 participants, whereas the qualitative data enabled a focused, deeper and more thorough understanding and insight of these trends along with additional assertions based on the experiences of 11 focal students.

Quantitative and qualitative data were collected and analyzed separately, followed by a synthesis of the results where the trends and conclusions built off of one another and created a strong foundation for overall conclusions to be drawn, resulting in suppositions to the initially posed research questions. Quantitative trends demonstrated the significance of the intervention on the two dependent variables, perception of ability EI related skills and perceptions of working with others. Before the intervention, many students reported negative perceptions of working with others which confirmed the results of earlier cycles of research wherein students and teachers alike noted the difficulty and dislike of groupwork. As a result of the intervention, quantitative data demonstrated the effect the intervention had on these perceptions as the survey results confirmed student perceptions had shifted from negative feelings of working with others to positive feelings of working with others. In addition to the perception of working with others, trends from quantitative data confirm that students also experienced an increase in their perceived ability EI related skills as a result of the intervention. The trends that emerged from the quantitative data were later found to be aligned with the qualitative findings, resulting in credible conclusions about the effects of the intervention.

Qualitative data analysis not only mitigated the weaknesses of quantitative data, it

provided extreme strength in confirming the trends that had emerged as well as created additional conclusions that could only have developed as a result of rich and thorough qualitative data. Therefore, qualitative data not only lent overwhelming credibility to quantitative findings, it also independently delivered evidence replete with unique details, quotes, and thoughts from every focal student voice and my field note observations. The qualitative evidence functioned as theorized by Ivankova (2015), providing thick descriptions to create a story told through the eyes of the participants and myself as the researcher. Once the quantitative and qualitative analyses had been conducted independently, as per the convergent parallel design, results were compared and alignment/triangulation was confirmed.

Qualitative analysis organically developed themes that aligned with quantitative results. Conclusions from quantitative results which aligned with qualitative data included the improved attitudes of students toward working with others as a result of the intervention. Qualitative findings also demonstrated improved attitudes toward working with others in teams. According to interviews, journal reflections, and observational field notes, focal students noted various factors that improved their experience while working with others including: the sense of a social connection; the comfort of contributing to their team and being encouraged to do so by feeling as if their voice was important to be heard; the continuous comparison between previous groupwork experiences and how the intervention, teamwork experience was greatly different; and the sense of social responsibility to their teams. Quantitative results also demonstrated significant changes in student perceptions with regard to their ability EI skills. Qualitative results confirmed and

expanded on this premise, with a multitude of examples from focal students citing their newly found abilities to address conflict, improve their communication skills, and most significantly use emotional data to change their behavior in order to perform to the best of their ability for the sake of their teams. Overall, the intervention appeared to have achieved its original purpose: improve students' perceptions of working with others, as well as improve their perceptions of their own ability EI related skills.

CHAPTER 5

DISCUSSION

The thought of working with others no longer makes my skin crawl. For myself and my students alike, the idea of group work may conjure up images from a distant past where students fell into traditional roles, dividing and conquering duties in isolation, or socially loafing while peers went to battle for their group to ensure they earned high marks. However, the practice of teamwork as was acted out during the present study essentially wiped away the remnants of these memories and replaced them with optimism and hope for more successful academic experiences in the modern classroom. The purpose of this study was to build on previous cycles of research I conducted that explored students' perceptions of teamwork. These cycles revealed that emotional issues were a foundational obstacle to the quality of collaboration when working with others. Therefore, the present study attempted to impact students' perceptions of their role as part of a team during teamwork positively. Additionally, the present study examined how students' perceptions of their role in teamwork was influenced by being paired with more advanced (ability EI) individuals, and determined the extent to which ability emotional intelligence related skills were developed over the course of a 7-week intervention. Achievement of each of these purposes was supported by the data analysis presented in Chapter 4.

The importance of the present research study as well as the backdrop on which this study took place were discussed and the method was established in earlier chapters. Further, the assertions and evidence presented in Chapter 4 demonstrated the

convergence of theory as ability emotional intelligence, sociocultural theory and collaborative learning, and Vygotsky's Zone of Proximal development were manifested through a dynamic and productive academic social environment in my classroom as witnessed by myself and focal students. The discussion and implications in this chapter were guided by the results discussed in Chapter 4. A discussion of theoretical conclusions and a summary overview of the study is offered, followed by discussion of the findings. Subsequently, personal lessons learned, limitations, and implications for practice and future research are presented.

Theoretical Conclusions

The intervention project cycle showcased teams of students working together in stark contrast to the group projects of the past. The inclusion of emotional theory and ability EI related skills practice had a significant impact on the presence and quality of collaboration as discovered through qualitative data analysis and substantiated with quantitative results. Collaboration was enabled through increased communication, inclusion, confidence, and sense of social responsibility; each of these factors was put into focus through emotional awareness and the novelty of discussing such concepts in the classroom. High quality social interactions are a necessary element to achieve high quality social regulation of information and tasks, according to Rogat & Linnenbrink-Garcia (2011) and social interactions are contingent upon communication. A major theme that emerged from qualitative evidence was the increased presence of communication as well as the reported increase in student participation via communication with teammates, with participation serving as the manifestation and production of collaborative learning

(Isohatala, et al., 2017).

The inclusion of ability emotional intelligence discussions and awareness impacted student perceptions of their experience, in support of findings from Ucan & Webb (2015) who posited that student groups are enabled to reestablish socio-emotional balance and maintain reciprocity of social interaction when they share in the regulation of motivation and emotions in the group. Each of the focal students revealed through either an interview or a reflective journal that being aware of their emotions and those of their teammates positively impacted their experience and their likelihood of participating and contributing, creating a sense of social responsibility to the team. Student participants represented a wide array of ability EI scores and individual concerns and focuses of students varied; however, despite differences of focus, students at every level of ability EI were positively impacted by the intervention. It has been said that emotional intelligence is the cohesive agent that binds people together, and can facilitate collaboration (Sung, 2015). The results from the present study support this theory, as ability EI appeared to be the magic ingredient that enabled students to consciously collaborate with their peers.

Overview of Research Design

The present research study was designed to determine if and how students in a modern K-12 public school classroom would be able to improve their perceptions of working with others to accomplish a shared goal. Additionally, the study was designed to determine if and how students could leverage their knowledge of and practice with ability emotional intelligence related skills to achieve enhanced participation and an improved

learning environment. As an experienced high school teacher with a love of hands-on learning and a high valuation of learning through collaboration, I recognized the need to create an intervention to disrupt the traditional patterns of group projects as identified by teachers and students in previous cycles of research. Traditional patterns were revealed as students worked in relative isolation with other students, hardly taking the time to learn the names of their peers as a result of low levels of social interaction. The intervention in the present study was developed to increase levels of social interaction when students worked in teams, using ability emotional intelligence theory and skills practice to enable emotional awareness of self and others in an attempt to improve collaborative practices.

Ability emotional intelligence and related skills are primarily cognitive functions; collaboration is an experience that occurs and is not necessarily tangible and easily measured simply through observation. As a practitioner-researcher, the problem of creating an environment conducive for teamwork and authentic collaboration in a high school classroom can be considered "complex practical problems" in need of comprehensive solutions (Ivankova, 2015, p. 3). For these reasons, a mixed methods study was chosen to frame the study and offer integration of qualitative and quantitative data with the ability to draw meta-inferences and recommendations for future practice. Qualitative and quantitative measures were utilized to capture the perception of these two variables as seen through the eyes of the students with reflective journals, interviews, and surveys, corroborated with observational field notes of multiple class sessions I documented. At the center of this study are the students, who depend on the school system to provide the opportunity for just and equitable learning that can be carried over

into their personal and future professional lives. Therefore, the perceptions they reported having are of utmost value to the understanding of how to create a collaborative learning environment for future cycles of students.

Data analysis involved a series of steps to achieve a rich, meaningful understanding of the impact the intervention had on student perceptions of working with others in a team and their ability EI related skill sets. Qualitative data was analyzed first. As described in Chapter 3, once all transcriptions of interviews, journals, and field notes were printed out I went through each set of data individually and hand-coded with a highlighter and pen, making memos and identifying concepts through open coding, where initial themes, assertions, sub-assertions and supporting evidence developed. The process was dynamic, starting with individual sets of data (i.e. interviews, followed by journals) and concluding with meta-analysis of the three qualitative sources.

Following the hands-on approach, the transcriptions were uploaded to qualitative software MAXQDA where the qualitative data was further analyzed and revised. Some initial codes were collapsed into categories for the sake of efficiency and in an effort to reduce redundancy, and in other instances new codes were created as a result of new, deeper insight. The assertions and sub-assertions that had begun to develop during hand coding and were solidified when input into MAXQDA were then aligned under the appropriate research question, providing deep understanding of the research questions from the viewpoint of the students themselves. Following qualitative analysis was quantitative analysis, where data from the post-intervention and retrospective pre-intervention surveys were uploaded. Data resulting from a one-way analysis of variance

(ANOVA) provided significant findings that supported the assertions made based on qualitative data, creating a point of integration on which strong conclusions in favor of the intervention were made.

Discussion of Findings

The findings of this action research study demonstrated the realized potential of implementing an intervention based on ability emotional intelligence, sociocultural theory, and the theory of Zone of Proximal Development. Through qualitative data, it was apparent that students had not experienced this level of collaboration in previous projects in any of their academic classroom settings, nor had they been aware of the importance of the role of emotion when working with others. The theoretical foundation of the intervention created the space for the confluence of variables which built off one another. Student participants were made aware of emotion theory and the Four Branch model; further, student participants were actively involved in activities that provided the opportunity to practice skills related to the four branches of the ability EI model. The skills were practiced first with a more advanced individual (myself as the teacher) followed by small team experiences in which ability EI levels of students were spread strategically to learn from more advanced peers over the course of a five-week project cycle. The subsequent sections offer three lessons learned about connections between theory, practice, and results of the present study.

Lessons Learned

Student perceptions of working with others in teams were malleable regardless of ability EI level. Despite an ingrained sense of pessimism when it comes to working with

others as reported through qualitative data in Chapter 4, students were able to reconceptualize their perceptions of working with others in the classroom setting in only seven weeks. In part what aided the divergence of experiences from past group projects to present intervention team-based projects was the language used to differentiate the two. As established in Chapter 1 of this study, teamwork was defined and reiterated to students as working as part of the collective on a prescribed task, with the need for continuous communication; the term 'teamwork' was repeatedly referred to by students throughout the data collection process as was the presence of increased and continuous communication among student teams. The differentiation of these terms during the intervention set the stage for students to experience a new process of working with others, enabling preconceived notions of groupwork to be replaced by a new set of expectations.

In addition to creating a clear, foundational difference between these terms, students reported changes in their perspectives about working with others as a result of the intervention. Eleven out of 11 students in the subsample reported differences in their experience in teams as compared to groups, with each one noting their preference for teams. In the quantitative data, statistical significance was found across all focal students involved in the intervention in terms of changed perspectives of working with others.

In Chapter 4, student voice throughout data collection lent credence to the snowball effect of intervention strategies and outcomes that lead to an improved and positive change in perception toward working with others in teams. Among them were increased communication; increased confidence communicating; sense of inclusion with

their team; a feeling of social responsibility that motivated students to do their part; the creation of a social bond among team members centered on trust; awareness of emotions in oneself and others and the use of this information to guide thinking and behavior throughout the intervention project cycle. When describing the necessary components for successful teamwork, it was noted by Carson, Laird, Reid, Deeny, & Mcgarvey (2018) that each of the following factors would be present: confidence in contributing; comfort in two-way communication; and sense of mutual respect and trust must. Each of these components was recorded through student voice and observation as being a part of the intervention experience as recorded through qualitative data, whereas previous experiences of groupwork was reported to be absent of these factors.

Pairing students with more advanced peers contributed to a greater sense of inclusion, leading to improved communication and therefore increased productivity of teams. Students' cognitive development was enabled in part through social interaction with more advanced peers and myself as the teacher, as discussed by the theory of Zone of Proximal Development (ZPD). In conjunction with social constructivism, knowledge was co-constructed "in mediated accordance with the context and experience with peers" (Lin, 2015, p. 12), and was a focal point of the present study. In order to create an atmosphere conducive to the co-construction of knowledge, peers needed to establish and develop a social connection, in turn creating a space where less experienced peers felt comfortable and safe contributing to the discussion and enabling two-way communication among all members as opposed to the traditional top-down, leader driven group where typically only one or two voices would dominate.

A cornerstone of the present study emerged from the ontological belief that learning occurred inherently through collaboration with others, once again with collaboration only occurring through participation of all students on the team. Inherent learning through collaboration in the present study placed emphasis on the significance of the quality of social interaction experienced during teamwork in a classroom setting and the importance of pairing students with more capable peers, as was the approach used in the present study. Therefore, ZPD, essentially the potential for growth of an individual when working with a more advanced other, played a role in the matching of students in teams based on ability EI scores. Ultimately matching students according to EI level lead to the creation of teams where not only did low-EI students benefit from being matched with higher-performing peers, but high-EI students also learned lessons about themselves and how they approached teamwork in an effort to modify their behavior to be more inclusive and open up lines of communication with teammates during the project cycle.

My original intent of integrating the theory of the Zone of Proximal Development (ZPD) into the present study was to create a line of impact from low EI students improving in their perceived ability EI skills as a result of working with high EI peers. The data analysis did not reveal a direct connection between low EI students and high EI students specifically. However, the ZPD theory extended across EI levels as all students on a team, regardless of initial EI level, reported positive changes in perception as a result of working with their team as a whole. The team environment was reported as being a safe space for students to feel comfortable communicating with others on their teams and

thereby increased the level of communication during the project cycle, which became the impetus for the presence of increased collaboration.

Although the original intent of the use of ZPD theory was not directly achieved, matching students with more experienced others did create an opportunity for growth among all students. Low EI students reported increased confidence in contributing to their teams, while high EI students reported recognizing the rigidity of their traditional roles and becoming more inclusive and patient with their peers. Therefore, it was through ability EI stacking of teams, concurrent with the knowledge and skills practice of emotion theory, the magic of collaboration was enabled. Students from each EI level remarked how successful their experience was with their teams due to improved social interactions experienced with teammates.

Ability Emotional Intelligence related skills are malleable can be developed through strategic development in a high school classroom. Whereas the actual ability EI score was only measured once for students, the focus of the present study was on improving perceptions of related skills. An individual may not be naturally good at reading a map; however, if provided a global positioning service (GPS) to use, they will most likely make it from point A to point B with little struggle. Likewise, an individual may not be naturally good at perceiving, using, understanding and managing emotions, yet they can be coached in skills that assist them in social situations. As was noted in Chapter 2, advocates of the four-branch EI model theorized that ability EI is established in childhood and developed over the course of a lifetime with the accumulation of

emotional experience, with the implication that while EI has not been proven to be grown, EI related skills are malleable (Salovey & Mayer, 2008).

The present study attempted to shed light on the potential to develop ability EI skills in a seven-week intervention, and based on the data presented in Chapter 4 the potential to develop these skills in a classroom setting has been illuminated. Salovey and Mayer (2008) suggested ability EI skills build on one another as they develop, and this occurs simultaneously. While lower level skills developed, they directly influenced individuals' abilities to cultivate higher-level EI skills (Mayer, Roberts, et al., 2008). The intervention was structured in such a way that students became aware of emotion theory, reflected on their emotions, and practiced skills related to each branch. The data in Chapter 4 demonstrated the concurrent convergence of ability EI skills as more than one branch was being used at a time by students to navigate the social interactions with their teams, supporting the academic premise of these skills building on one another simultaneously.

Personal Lessons Learned

The present study far exceeded my expectations insofar as not only improving my skills as an academic researcher, but also as an educator. My engagement with this action research study has impacted me on several levels. As a researcher, I have a new understanding and appreciation for the voices of participants to be heard and to trust in the patterns that emerge through multiple cycles of data collection. After being immersed in the world of research I learned to value the delicate nature and integrity of the research process as it is conducted by humans, with our many obstacles and limitations, in pursuit

of greater understanding of and attempt to resolve modern issues. Further, I discovered the satisfaction that can come from researching an area that has been little mentioned in academic research, overcoming hesitation and concern created by conducting research on a topic with relatively little support in academic literature.

As an educator, I found that I was not alone when I winced at the thought of groupwork as a participant, despite the fact that I saw the potential for collaboration to be a significant tool for enhanced learning environments. Further, I discovered a solution to bridge the apparent dichotomous relationship between theoretically successful collaboration in the classroom and actual practice of working in teams. As an educator, I learned that practical strategies can and did exist that enabled growth among students not just in terms of learning, but also personal development to be carried with them into their future beyond the K-12 world. Going forward, I will be an advocate for the supplementation of ability emotional intelligence practice in the classroom to be used in combination with teamwork for enhanced learning experiences, and I will continue to tinker with said strategies in an effort to achieve continuous improvement.

Limitations

Action research continues to be considered an emerging approach in the academic world. In part what makes action research progressive and simultaneously limiting is the researcher's role as both researcher and in many cases such as the present study, main participant in conducting the intervention. As such, limitations existed. My dual role as an authority figure (teacher) and as the action researcher created the potential for students to provide answers they believed I was looking for so as to not fall out of favor with me.

This limitation was addressed through explicit recognition of having my foot in two worlds with my students, and direct acknowledgment of the need to be honest and open for the larger purposes of research and not personal judgement. The next limitation experienced in the present study was the absence of a comparative study in another classroom on campus in order to corroborate the experiences my students were having as a result of the intervention. A final limitation to the study was the inability to collect the remaining six retrospective pre-tests from six students who were habitually absent. The MSCEIT-YRV scores of these students were: 5 medium-EI and 1 high-EI. Of these students, 4 were female and 2 were male. The scores from these students could have added more depth in analysis through a larger sample size for data collection purposes.

Implications for Future Practice and Research

The results of this study offer a solution to the documented divide of educational practices in the K-12 classroom and the expectations of adults living and working in the 21st century. As Zmuda, et al. (2015) put it, "there is a disconnect between the traditional school model and the challenges and opportunities of today's world" (p. 6). Further, according to the National Research Council (2012), schools must ensure all students are content-capable, culturally literate, and lifelong learners; and they were also to be competent in intra- and inter-personal abilities, so they are prepared for the workforce and life. As noted in Chapter 1, the federal government is aware of the need for teaching 'soft skills' such as those related to emotion in schools with the US Department of Education recently awarding points to districts for making Social-Emotional Learning (SEL) a large piece of their pedagogical structure (Weissberg & Cascarino, 2013). The

question I posited early in the present study was: Is implementation of the SEL the best way to achieve these emotionally-oriented goals, or can this be accomplished through a more systematic method integrated into academic courses?

Based on the research outcomes from the present study, the answer to the above question is *no*; I contend that while SEL may be beneficial in its own right, the targeted intervention I created and implemented will be much more practical to integrate across academic classrooms. The results demonstrated that significant changes can occur with student perceptions in only seven weeks, with only two of those weeks dedicated solely to emotional theory instruction. However, student pessimism in qualitative data provided evidence that unless students can expect consistency across classrooms in terms of ability EI training and expectations, the results may be as unique as the intervention itself. A focal student commented on the novelty of the intervention as noted in Chapter 4, adding that while it improved his perceptions of working with others in this instance, he acknowledged that emotional awareness is not common practice in the classrooms and therefore his experience in the intervention is unsustainable.

Further, in my experience administrators often report frustration with getting teachers to 'buy-in' to the new and improved teaching strategies and trends in the classroom at the beginning of each school year. This is due in part to the notion that there is a new required method mandated in education every year. Teachers report feeling as if regardless of what writing template or lesson plans are instituted and mandated by the district, students are not reaching their academic potential. With group projects becoming a mainstream aspect of modern teachers' pedagogical arsenals, successful and high-

quality collaboration should be a top priority. The results of the present study offer a solution to this issue, enabling teachers from every subject area and with any student demographic to teach their students the skills necessary to succeed when working with others. A teacher would be more inclined to 'buy-in' to this strategy if they were aware of the advantages for their classroom. The present study concluded that students can benefit from the experience of increased social connections and improved collaboration. This has been shown to occur via enhanced emotional awareness as established by the Four Branch Model and demonstrated through student perspectives during data collection, learning skills upon which social relations in professional (and personal) settings can be improved. Therefore, the implications from the present study may be enough reason for teachers across classrooms to adopt the ability EI intervention as a part of their pedagogical methods.

However, in order to substantiate this stance, further research is necessary. To appeal to teachers who are mandated to teach new methods nearly every year coupled with students who desire consistency across classrooms, a wider depth and breadth of research around the implementation of this intervention is essential. As such, in order to substantiate the implementation of the ability EI intervention in K-12 classrooms, research would need to be conducted across a variety of settings including various age ranges, academic content classes, and instructors of both genders. Variations of the intervention should be attempted to continue to revise the approach in an effort to continuously improve it, while monitoring student perceptions and providing an opportunity for macro-focused patterns of student perceptions to emerge.

Conclusion

Academic literature has yet to widely support the notion that ability EI can be developed over time, yet this study demonstrated the potential for the perception of skills related to ability EI to be developed in a seven-week period. Ability EI was an ever-present force in the intervention of the present study and the inclusion of discussion around emotional concepts impacted students in many ways. Ultimately, students felt they benefited from the intervention during the project cycle with their teammates, in their personal lives, and felt more prepared for future situations in professional settings and systems of higher education. As such, the value for teaching emotion in the classroom is meaningful. An educator's dream is to positively influence the lives of their students; in this instance, I feel assured that the student participants in this study were greatly impacted as seen in increased confidence, self-reflections, improved collaborative experiences, and most importantly, hope for the future based on their newfound confidence with their emotional abilities.

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APPENDIX A

POSTTEST ADAPTED SREIS

Teamwork Survey

Letter of Introduction

Dear Students,

Thank you for volunteering to participate in this survey! I am a graduate student in the doctoral program in Leadership and Innovation at the Mary Lou Fulton Teachers College (MLFTC) at Arizona State University (ASU). I am working under the direction of Dr. Melanie Bertrand. The following survey has been developed to measure attitudes and perceptions individuals have toward team-based activities in the classroom, attitudes and perceptions of skills related to emotional regulation, and attitudes and perceptions of what would be seen as effective teamwork in the classroom. The definition of teamwork used for this study is: the ability of students to work with one another, continuously and for a limited time, with the focus of teamwork centering on an ability to successfully navigate social interactions with members of the team, particularly in times of conflict and disagreement.

In order to discover ways in which teamwork can be developed effectively, I am asking for your help in completing the survey below. The survey consists of 20 questions, and answers will be based on your past and present experience in working with others. The survey will be confidential and is estimated to take 15 minutes to complete. Participation is voluntary, and the results may be published, but your name will not be used. The survey will be completed during a regular class session of US Government.

By completing this survey, you will be adding to the development of effective methods to approach and participate in teamwork activities, an important skill that is transferrable to many situations in the professional world. Additionally, future

generations of students will benefit from this information as the objective of the study is to make teamwork more efficient and enjoyable for all team members. Additionally, there are no apparent disadvantages or risks to your participation in this survey.

If you have any questions concerning the research study or you or your student's participation in it please contact Dr. Melanie Bertrand at Melanie.bertrand@asu.edu or me at azuniga@sjusd.org or at (408)535-6330 x305.

If you feel as though you have been placed at risk, you can contact the Chair of Human Subjects Institutional Review Board through the ASU Office of Research Integrity and Assurance at (480) 965-6788.

Please complete each section below openly and honestly. When you are finished, please submit your survey responses to the researcher by handing it in.

Sincerely,

Alison Zuniga, Doctoral Student

Arizona State University

Mary Lou Fulton Teacher's College

azuniga@sjusd.org

Section 1 (Construct 1): Student self-perception as member of team or alone.

Directions: Please indicate to what extent you feel each of the following statements applies to your experience when working in a team in the classroom. Write your answer on the line next to the appropriate statement.

5	4	3	2	1
Agree	Somewhat Agree	Neither	Somewhat Disagree	Disagree

(1) I enjoy being part of a group. _____

(2) I support my teammates. _____

(3) I feel I must respect the decisions made by my team. _____

(4) I am not good at working with a team. _____

(5) I prefer to do everything alone. _____

(6) I work best when I am alone. _____

Section 2 (Construct 2): Self-reported perception of skills related to emotional regulation.
Directions: Please indicate how you feel each of the following statements applies to your experience working in a team in the classroom.

5	4	3	2	1
Agree	Somewhat Agree	Neither	Somewhat Disagree	Disagree

1. By looking at people's faces, I can tell the emotions they are experiencing.	
2. I am a logical person and I hardly ever think about my feelings when I make a decision.	
3. I know a lot of words to describe my emotions.	
4. I have problems dealing with my feelings of anger.	

5. When someone I know is in a bad mood, I can help the person calm down and feel better quickly.	
6. I am good at picking up on body language cues.	
7. When making decisions, I listen to my feelings to see if the decision feels right.	
8. I could easily write a lot of synonyms for emotion words like happiness or sadness.	
9. I can handle stressful situations without getting too nervous.	
10. I know how to or improve other people's moods.	

Section 3 (Construct 3): Attitudes and perceptions of effective teamwork in the classroom.

Directions: Please agree or disagree with the following statements by circling one of these two choices, and briefly explain your answer.

1. A team that works well has members who share responsibilities. (Agree/Disagree)
    a. Explain:

2. A team works well when all team members' voices are heard during a group project. (Agree/Disagree)
    a. Explain:

3. When members of a team solve problems within their team on their own without help from the teacher, the team can be considered to be working-well. (Agree/Disagree)
    a. Explain:

4. When team members working on a group project each have their own role in the team, the team can be considered to be working-well. (Agree/Disagree)
   Explain:

APPENDIX B

RETROSPECTIVE PRE-INTERVENTION SURVEY ADAPTED SREIS

Teamwork Survey

Letter of Introduction

Dear Students,

Thank you for volunteering to participate in this survey! I am a graduate student in the doctoral program in Leadership and Innovation at the Mary Lou Fulton Teachers College (MLFTC) at Arizona State University (ASU). I am working under the direction of Dr. Melanie Bertrand. The following survey has been developed to measure attitudes and perceptions individuals have toward team-based activities in the classroom, attitudes and perceptions of skills related to emotional regulation, and attitudes and perceptions of what would be seen as effective teamwork in the classroom. The definition of teamwork used for this study is: the ability of students to work with one another, continuously and for a limited time, with the focus of teamwork centering on an ability to successfully navigate social interactions with members of the team, particularly in times of conflict and disagreement.

In order to discover ways in which teamwork can be developed effectively, I am asking for your help in completing the survey below. The survey consists of 20 questions, and answers will be based on your **PREVIOUS experience with others before the Propositions Project.** The survey will be confidential and is estimated to take 15 minutes to complete. Participation is voluntary, and the results may be published, but your name will not be used. The survey will be completed during a regular class session of US Government.

By completing this survey, you will be adding to the development of effective methods to approach and participate in teamwork activities, an important skill that is

transferrable to many situations in the professional world. Additionally, future generations of students will benefit from this information as the objective of the study is to make teamwork more efficient and enjoyable for all team members. Additionally, there are no apparent disadvantages or risks to your participation in this survey.

If you have any questions concerning the research study or you or your student's participation in it please contact Dr. Melanie Bertrand at Melanie.bertrand@asu.edu or me at azuniga@sjusd.org or at (408)535-6330 x305.

If you feel as though you have been placed at risk, you can contact the Chair of Human Subjects Institutional Review Board through the ASU Office of Research Integrity and Assurance at (480) 965-6788.

Please complete each section below openly and honestly. When you are finished, please submit your survey responses to the researcher by handing it in.

Sincerely,

Alison Zuniga, Doctoral Student

Arizona State University

Mary Lou Fulton Teacher's College

azuniga@sjusd.org

Think about yourself as a member of a team BEFORE we completed the emotional intelligence strategies training and Propositions Project.

Directions: Please indicate to what extent you felt each of the following statements applied to your experience when working in a group in the classroom. Write your answer on the line next to the appropriate statement.

5	4	3	2	1
Agree	Somewhat Agree	Neither	Somewhat Disagree	Disagree

(1) I enjoyed being part of a group. _____

(2) I supported my group mates. _____

(3) I felt I must respect the decisions made by my group. _____

(4) I was not good at working with a group. _____

(5) I preferred to do everything alone. _____

(6) I worked best when I was alone. _____

Think about your perception of skills related to emotional regulation BEFORE we completed the emotional intelligence strategies training and Propositions Project.

Directions: Please indicate how you felt each of the following statements applied to your experience working in a group in the classroom.

5	4	3	2	1
Agree	Somewhat Agree	Neither	Somewhat Disagree	Disagree

1. By looking at people's faces, I could tell the emotions they were experiencing.	
2. I am a logical person and I hardly ever thought about my feelings when I made a decision.	
3. I knew a lot of words to describe my emotions.	

4. I had problems dealing with my feelings of anger.	
5. When someone I knew was in a bad mood, I could help the person calm down and feel better quickly.	
6. I was good at picking up on body language cues.	
7. When making decisions, I listened to my feelings to see if the decision felt right.	
8. I could easily write a lot of synonyms for emotion words like happiness or sadness.	
9. I could handle stressful situations without getting too nervous.	
10. I knew how to improve other people's moods.	

***Think about your attitudes and perceptions of effective teamwork in the classroom**

BEFORE we completed the emotional intelligence strategies training and

Propositions Project.*

Directions: Please indicate how you felt each of the following statements applied to your experience working in a group in the classroom. Then please explain your answers using bullet point responses.

5	4	3	2	1
Agree	Somewhat Agree	Neither	Somewhat Disagree	Disagree

1. A team that works well has members who share responsibilities. (_____)
    a. Explain:

2. A team works well when all team members' voices are heard during a group project. (_____)
    a. Explain:

3. When members of a team solve problems within their team on their own without help from the teacher, the team can be considered to be working-well. (_____)
    a. Explain:

4. When team members working on a group project each have their own role in the team, the team can be considered to be working-well. (_____)
    a. Explain:

Student Background Information

Directions: In this section, please tell me a little more about yourself. Please mark the circle that corresponds with your answer with an X. Answers are voluntary.

A. Gender Identification
    - o Female
    - o Male
    - o Prefer not to answer

B. Age
    - o 14-16
    - o 17-18

C. Race/Ethnicity
    - o Hispanic/Latino
    - o Caucasian/White
    - o African American
    - o American Indian or Alaska Native
    - o Multiple Races/other (please specify): _____

D. In how many classes have you completed a group project over the last 2 semesters?
    - o 0
    - o 1-2
    - o 3-4
    - o 5-6

- 6+

E. What are your plans for next year?
   - Work
   - 2-year college
   - 4-year college

F. In what professions are you interested in pursuing a career?
   - Education
   - Medicine
   - Law
   - Social work
   - Technology
   - Other (please specify)

End of Survey

You have reached the end of your survey. Thank you for your participation, it is greatly appreciated!

If you have any questions concerning the research study or you or your student's participation in it please contact Dr. Melanie Bertrand at Melanie.bertrand@asu.edu or me at azuniga@sjusd.org.

If you feel as though you have been placed at risk, you can contact the Chair of Human Subjects Institutional Review Board through the ASU Office of Research Integrity and Assurance at (480) 965-6788.

Sincerely,

Alison Zuniga, Doctoral Student
Arizona State University
Mary Lou Fulton Teacher's College
azuniga@sjusd.org

APPENDIX C

MSCEIT-YRV

(MAYER, SALOVEY, CARUSO EMOTIONAL INTELLIGENE TEST/YOUTH RESEARCH VERSION)

Please Read This First

The MSCEIT-YRV™ has four parts. Each part has different instructions. Some questions are different than questions on other tests because they are about feelings and emotions. Try to answer every question as best as you can. If you don't know an answer, make your best guess.

Please don't answer in this book. Write your answers on the MSCEIT-YRV™ Answer Sheet.

Part A

Practice Question A

Look at this person's face. How much surprise is she showing? How much sadness? How much happiness? How much disgust?

Look in the box below to find the feelings and the answers you can choose from.

	None at all	A little feeling	A medium feeling	A strong feeling	A very strong feeling
1. **Surprise**	1	2	3	4	5
2. **Sadness**	1	2	3	4	5
3. **Happiness**	1	2	3	4	5
4. **Disgust**	1	2	3	4	5

If you think she is not showing any **surprise**, color in the square with a 1, like this:

1	2	3	4	5

If you think she has a medium feeling of **surprise**, color in the square with a 3, like this:

1	2	3	4	5

Now **you** decide how much of **each** emotion she is showing. Fill in your answers for Practice Question A on your Answer Sheet. Sometimes there is more than one good answer, but choose the number that seems like the **best** one for **each** emotion.

Some of the questions may be difficult. When you don't understand a question, don't worry. Just do the best you can and answer every question. Make your best guess when you're not sure how to answer.

Now turn the page and answer the questions for the next faces. Remember to choose an answer for every emotion for every face and remember to mark your answers on your Answer Sheet.

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[7] Image borrowed with permission from MSCEIT-YRV/Multi-Health Systems, Inc. MSCEIT-YRV is a long document so this sample page from the test is provided for context. Whole document available upon request.

APPENDIX D

SEMI-STRUCTURED INTERVIEW PROTOCOL

Interview Questions:

1. **Relating to Branch 1: Perceiving emotions**
    a. Please respond to these questions based on your experience applying the skills we learned over the last 6 weeks and practiced during the project cycle.
        i. How effective are you about recognizing your own emotions while working with others?
        ii. How are you able to tell what your teammates are feeling, based on both their words and their body language?
        iii. Can you tell the difference between authentic emotional expressions and false emotional expression in your teammates? How?
        iv. Do you think it is important to recognize what you are feeling, and what others are feeling, during teamwork? Why?
        v. Please describe your experience working in your team during the project cycle we just completed. What did you do differently during this project that you hadn't done before?
        vi. As you worked in a team during the project cycle, what did you learn about identifying your feelings and the feelings of others?
2. **Branch 2: Using Emotions**

a. Please respond to these questions based on your experience applying the skills we learned over the last 6 weeks and practiced during the project cycle.
    i. What role did your emotions play during this project cycle?
    ii. In what ways did your emotions send you signals when you were working in a team?
    iii. What strategies best helped you think about your emotions and use them to help you when working in your team?
    iv. Is it important to use your emotions to guide your thoughts and behavior during teamwork? Why?
    v. In what ways was your experience in teamwork different this time than previous experiences?

3. Branch 3: Understanding Emotions

a. Please respond to these questions based on your experience applying the skills we learned over the last 6 weeks and practiced during the project cycle.
    i. How were you able to handle conflict during this project? Did you use a different approach than you've used before? If so, what?
    ii. Please describe any negative emotions you felt during the project. What was causing these emotions? What was the process you went through to respond to these emotions?

iii. Please describe any positive emotions you experienced during your project. What was causing these emotions?

iv. During the project, were you able to identify what was causing the emotions of your teammates? How did you use this information to guide your responses to them?

v. How was your experience in this project different from previous experiences, after learning about emotional causes and expanding your emotional vocabulary?

4. Branch 4: Managing Emotions

a. Please respond to these questions based on your experience applying the skills we learned over the last 6 weeks and practiced during the project cycle.

i. During the project, did you experience any stressful times with your teammates? How did you respond?

ii. What strategies did you use during this team project to manage your emotions? Do you feel it worked? Why?

iii. What strategies did you use during this team project to respond to the emotions of your teammates? Do you feel it worked? Why?

iv. When you were feeling stressed during the project, what activity helped you to relax? (ex. journaling, meditating, anger management, etc.)

v. Do you believe it is important to be aware of your emotions, AND be able to control them, when working as part of a team? Why?

vi. Please describe how this experience working as part of a team was different from previous experiences. To what extent was it different because you were aware of strategies to manage your emotions? Why?

5. General Questions

a. How do you feel about your ability to work as part of a team, as a result of this innovation? Why?

b. In what ways did it help you work as part of a team by learning about emotions in general, and your emotions specifically?

c. What feels different about working in a group on a group project, compared to working as part of a team to solve a problem?

d. What strategies or information will you take with you into future team projects?

e. What did you learn about being a part of a team from this project cycle?

f. How important is it to you to be aware of your emotions when working with others?

g. How has your perspective about teamwork changed as a result of this project cycle?

h. How can you use the information you learned about working as a team in other areas of your life.

APPENDIX E

EMOTIONAL JOURNALING

Directions: Please spend 20 minutes (timed) allowing yourself to explore what you're feeling. This is part of an on-going journaling assignment and must be done in the same notebook. Please use the following guidelines:

1. Write for at least 20 minutes, without stopping
2. Keep on writing without thinking about what to say or how you want to say it; don't edit your thoughts
3. Include positive emotion words, as well as causal and insightful phrases
4. If it is easier, you can write a letter to a friend or an imaginary person to get started

APPENDIX F

SEMI-STRUCTURED FIELD NOTES PROTOCOL

Time	**Branch**	**Skill**	**Skill**	**Skill**	**Skill**	**Skill**	**Skill**
	Perceiving						
	Using						
	Understanding						
	Managing						

Time	Interactions	Actions	Notes	Visuals

APPENDIX G

INSTITUTIONAL REVIEW BOARD (IRB) APPROVAL

APPROVAL: MODIFICATION

Melanie Bertrand
Division of Educational Leadership and Innovation - West Campus -
Melanie.Bertrand@asu.edu

Dear Melanie Bertrand:
On 9/7/2018 the ASU IRB reviewed the following protocol:

Type of Review:	Modification
Title:	Harnessing Emotions: The Impact of Developing Ability Emotional Intelligence Skills on Perceptions of Collaborative Teamwork in a Project-Based Learning Class
Investigator:	Melanie Bertrand
IRB ID:	STUDY00008447
Funding:	None
Grant Title:	None
Grant ID:	None
Documents Reviewed:	• Appendix H Letter of Information for Parents with students 18+, Category: Recruitment materials/advertisements /verbal scripts/phone scripts; • Appendix B Parental Consent Form, Category: Consent Form; • Appendix G Interview Protocol, Category: Measures (Survey questions/Interview questions /interview guides/focus group questions); • Appendix F Observation Checklist, Category: Measures (Survey questions/Interview questions /interview guides/focus group questions); • Appendix C Student Assent Form, Category: Consent Form; • District consent, Category: Off-site authorizations (school permission, other IRB approvals, Tribal permission etc);
	• Appendix A MSCEIT, Category: Measures (Survey questions/Interview questions /interview guides/focus group questions); • Appendix D Student Consent Form, Category: Consent Form; • Appendix E Survey, Category: Measures (Survey questions/Interview questions /interview guides/focus group questions); • IRB Protocol, Category: IRB Protocol;

The IRB approved the modification.

When consent is appropriate, you must use final, watermarked versions available under the “Documents” tab in ERA-IRB.

In conducting this protocol you are required to follow the requirements listed in the INVESTIGATOR MANUAL (HRP-103).

Sincerely,

IRB Administrator

cc: Alison Zuniga Alison Zuniga

BIOGRAPHICAL SKETCH

Alison Zuniga was a Social Science and English teacher in San Jose, CA for nine years. She is originally from San Jose, CA and earned her Bachelor's Degree in Psychology in 2008 from California State University, Chico. She went on to earn her Master's Degree while working full time as a teacher in Educational Administration from Concordia University, Irvine. She earned her Doctoral degree in Leadership and Innovation from Arizona State University while working full time and throughout her pregnancy and birth of her first daughter, Isabella. Alison is married to Alex Zuniga, successful entrepreneur and business owner. Through the doctoral research process Alison fell in love with qualitative research and is pursuing a career in the research field.